NEW

Nintendo
Entertainment System
NES Version
POWER
RESET
SELECT START
Nintendo
DOT MATRIX WITH STEREO SOUND
SCORE 377
LEVEL 6
LINES 1
BATTERY
Nintendo GAME BOY™
SELECT START

100% UNOFFICIAL

THE BIG BOOK OF NINTENDO

NINTENDO 64
ZELDA
PAL VERSION
POWER
EJECT
Nintendo
SUPER NINTENDO
ENTERTAINMENT SYSTEM
NINTENDO GAMECUBE
NINTENDO GAMECUBE
START/PAUSE

From the makers of retro GAMER

Digital Edition

FUTURE
FIRST EDITION

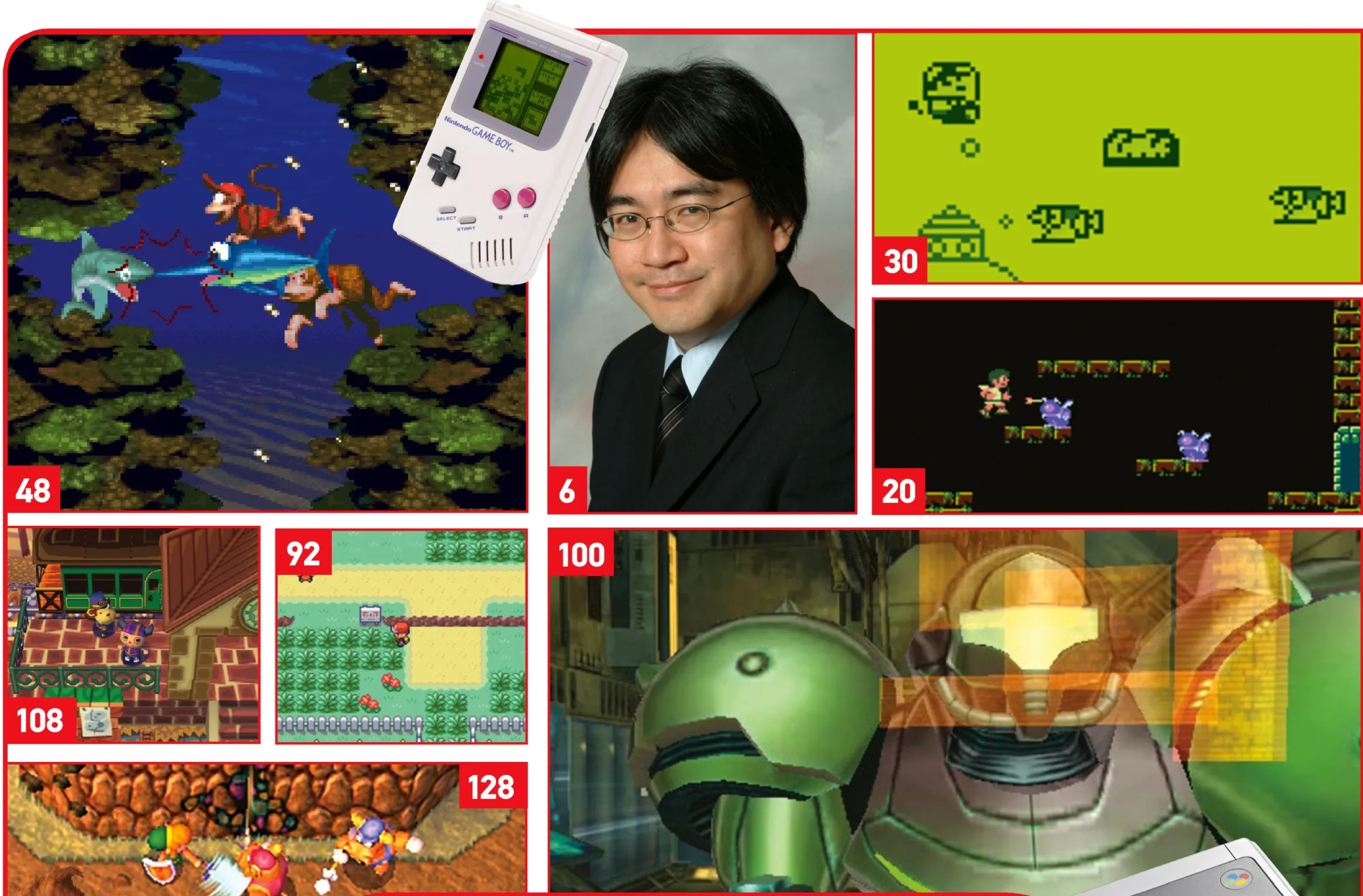
THE ULTIMATE GUIDE TO THE VERY BEST OF NINTENDO

VISIT…

LANZAROTE
Caliente.COM

THE BIG BOOK OF NINTENDO

Home to some of the most iconic games, groundbreaking consoles and recognisable characters in videogame history, Nintendo is one of the most popular and well-loved entertainment companies on the planet. In this bookazine we celebrate the very best of Nintendo, and discover the key moments on the company's journey from playing card manufacturer to gaming powerhouse. We've got in-depth looks at some of the greatest videogames ever seen, such as *The Legend Of Zelda: A Link To The Past* and *Super Mario 64*, while we count down the top 25 games on the NES, Game Boy Advance and GameCube. We also go under the hood of the consoles that have shaped Nintendo's story and gaming as a whole, with fascinating features on the Nintendo 64, Super Nintendo, Game Boy and many more. Enjoy!



CONTENTS

06 The Nintendo Timeline
Discover the key moments on Nintendo's journey to becoming one of the most popular entertainment companies in the world

08 Arcade Perfect: Donkey Kong
Check out the classic arcade cabinet that introduced the world to Mario!

10 The Making of the NES
Discover the inside story of Nintendo's iconic first cartridge-based console from the man who designed it

20 The 25 Greatest NES Games
We count down the NES's top 25 games, as voted for by Retro Gamer readers…

30 The Impact of the Game Boy
Look back at the story of how Nintendo's handheld became a cultural phenomenon and gaming icon

40 Retro Revival: Tetris
Join us as we celebrate Alexey Pajitnov's iconic and important puzzler

42 Ultimate Guide: Super Mario Land
Discover the story of Mario's small but mighty handheld adventure

48 Playing with Super Power: Inside the Super Nintendo
We speak to veteran SNES developers to find out how the games that made the console legendary were shaped by what was inside it

62 Ultimate Guide: The Legend Of Zelda: A Link To The Past
We look back at arguably the best 2D game in the *Zelda* series and what made it so special

68 Inside the Nintendo 64
With the help of veteran devs, we delve into the N64 to find out what made the gaming powerhouse tick

78 Retro Revival: Mario Kart 64
Are there any games from the Nineties more groundbreaking than this? We don't think so

80 Super Mario 64: Nintendo's 3D Game-changer
In an age when it was said that 3D platformers didn't work, Nintendo proved us wrong. We look at the impact of the N64's most revolutionary game

CONTENTS

Measure your brain age
Oh, dear... Your brain is very tired. But don't lose heart!
116
124
62
120
42
126
80

90 **Hardware Heaven: Game Boy Color**
Gaze at the beauty of Nintendo's glorious handheld and successor to the original Game Boy

92 **Top 25 Game Boy Advance Games**
Nintendo's handheld had more than its fair share of incredible games, we count down the very best...

100 **Celebrating the GameCube**
Take a fond look back at the system that established the foundations for Nintendo's juggernaut, the Wii

108 **Top 25 GameCube Games**
The GameCube recently hit its 20th anniversary in Europe, so to celebrate, we asked readers to vote for their favourite games. The results are in...

116 **Hardware Heaven: Nintendo DS**
Celebrate the success of Nintendo's biggest-selling console and mobile gaming rival

118 **Retro Revival: Mario Kart DS**
We recall the joy of online gaming on our trusty Nintendo DS

120 **Hardware Heaven: Nintendo Wii**
We take a brief look at the console we once heard described as "two GameCubes sellotaped together"

122 **Retro Revival: Wii Sports**
Nintendo's motion-sensor sports game did the impossible and attracted new casual gamers

124 **Hardware Heaven: Nintendo Switch**
Discover Nintendo's groundbreaking hybrid console and how it took the world by storm

126 **Perfect Ten: Nintendo Switch**
Discover ten must-play games that made their debut on Nintendo's Switch

128 **Best of the Rest**
With over 40 years in gaming, there's almost too much Nintendo to cover – here are the highlights we couldn't squeeze in elsewhere

THE NINTENDO TIMELINE

Here are the key moments on Nintendo's journey to becoming one of the most popular entertainment companies in the world

1880s

FUSAJIRO YAMAUCHI FOUNDS NINTENDO

23 September 1889

■ Nintendo started out making playing cards, and still does so today.

FAMILY COMPUTER

THE FAMICOM ARRIVES

15 July 1983

■ Nintendo launches an 8-bit console. A redesigned international version, the Nintendo Entertainment System, is launched in 1985 and becomes extremely successful. In 1990, it is the best-selling console ever.

1940s

1970s

1980s

HIROSHI YAMAUCHI TAKES CONTROL

25 April 1949

■ Taking over from his grandfather, Yamauchi becomes the third president of Nintendo. He controls the company for over 50 years, taking it from manufacturing playing cards to toys, arcade games and eventually home videogames.

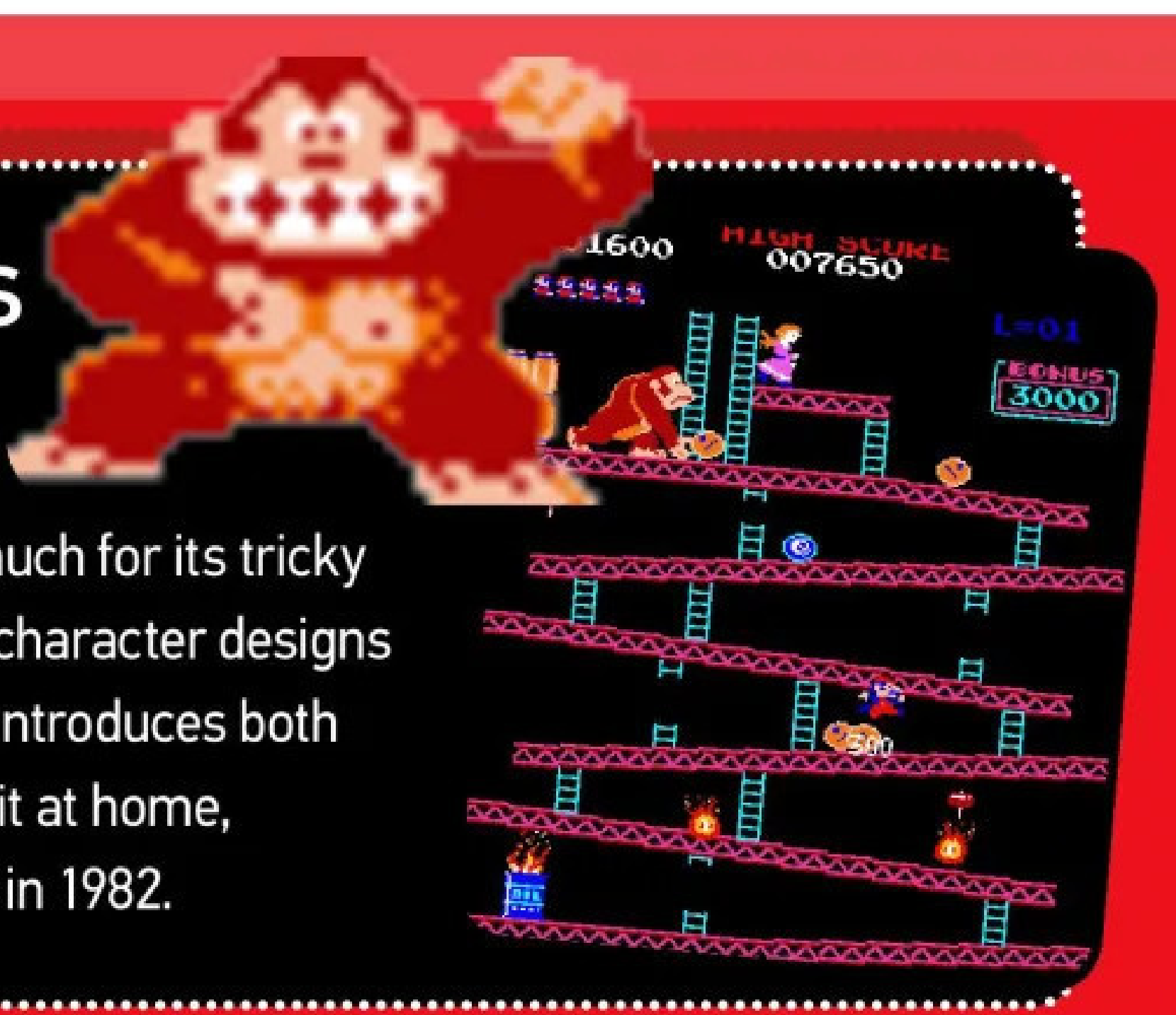
NINTENDO LAUNCHES ITS FIRST HOME CONSOLE

1 June 1977

■ Unlike later Nintendo consoles, the Color TV-Game systems were only launched in Japan.

DONKEY KONG BARRELS INTO ARCADES

9 July 1981

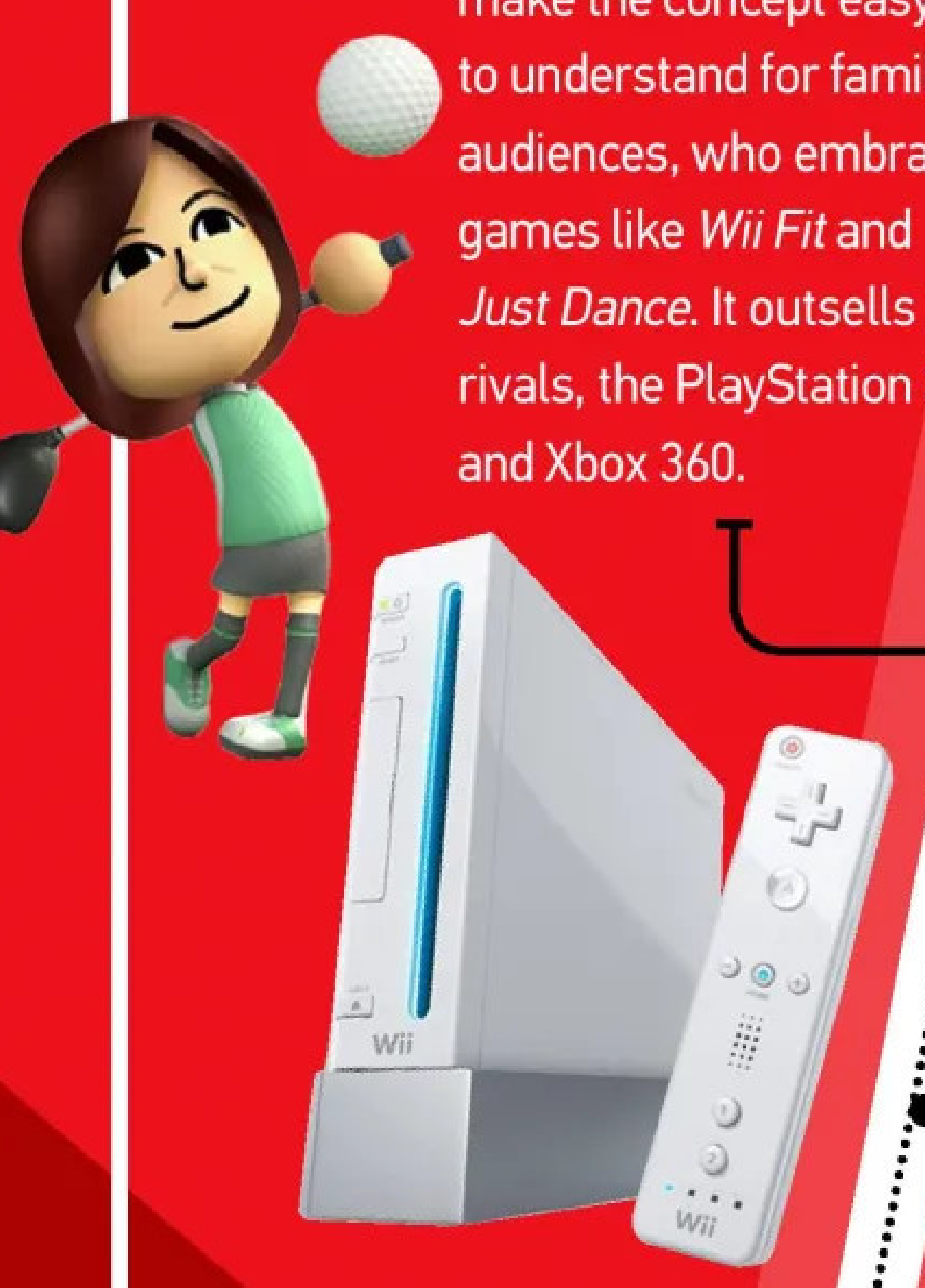


■ Nintendo's platformer is a hit, as much for its tricky platform gameplay as the appealing character designs from Shigeru Miyamoto – this game introduces both Mario and Donkey Kong. It is also a hit at home, helping to sell ColecoVision consoles in 1982.

WII SWINGS INTO ACTION

19 November 2006

■ Nintendo introduces the Wii, a console that favours motion controls over cutting-edge graphical performance. Games like *Wii Sports* make the concept easy to understand for family audiences, who embrace games like *Wii Fit* and *Just Dance*. It outsells its rivals, the PlayStation 3 and Xbox 360.



SATORU IWATA TAKES CHARGE

24 May 2002

■ The former HAL programmer succeeds Yamauchi as Nintendo's president. The company experiences massive success and challenges during his presidency, which ends when he passes away in 2015.

ANIMAL CROSSING MOVES INTO THE NINTENDO NEIGHBOURHOOD

14 April 2001

■ *Animal Crossing* is soon enhanced for the GameCube after making its debut on the N64.

DOUBLE THE SCREENS, DOUBLE THE FUN

21 November 2004

■ The DS becomes the first Nintendo console to make its debut outside of Japan, featuring non-traditional games like *Nintendogs* and *Dr Kawashima's Brain Training*. It sells over 154 million units, becoming Nintendo's best-selling system ever.

THE GAMECUBE BOXES CLEVER

14 September 2001

■ It came in various colours, but the purple GameCube is iconic.

ICONS UNITE

6 November 2007

■ *Mario & Sonic At The Olympic Games* puts the former rivals in friendly competition.

WII 2? NO, WII U

18 November 2012

■ The Wii U had some great games, but didn't win over many players.

2010s

XENOBLADE CHRONICLES SETS FORTH FOR ADVENTURE

10 June 2010

■ Fans had to campaign to see Monolith Soft's RPG classic released in North America.

GOING STRAIGHT TO THE PLAYERS

21 October 2011

■ Nintendo introduces its regular Nintendo Direct video series, which serve to update players on upcoming games. These become popular with fans thanks to a mixture of humour, major announcements and surprises, and the pre-recorded videos soon replace traditional live presentations at the E3 trade show.

MARIO
006400
x23
WORLD
1-1
TIME
297
2000

SUPER MARIO BROS LEAPS INTO ACTION

13 September 1985

■ After appearing in a popular single-screen arcade platform game, Mario and Luigi star in a game that sets a new standard for the entire platform genre. The game is packed in with NES consoles, and its popularity helps the system to become a success, selling tens of millions of copies.

THE GAME BOY DEBUTS

21 April 1989

■ This handheld's greyscale display looks underwhelming next to the colour of the Atari Lynx, but Gunpei Yokoi's smart design emphasises battery life, giving Nintendo the advantage. The addictive properties of *Tetris*, the flagship puzzle game, don't hurt either, and turn the system into a smash hit.

Nintendo GAME BOY

KIRBY TICKLES GAMERS PINK

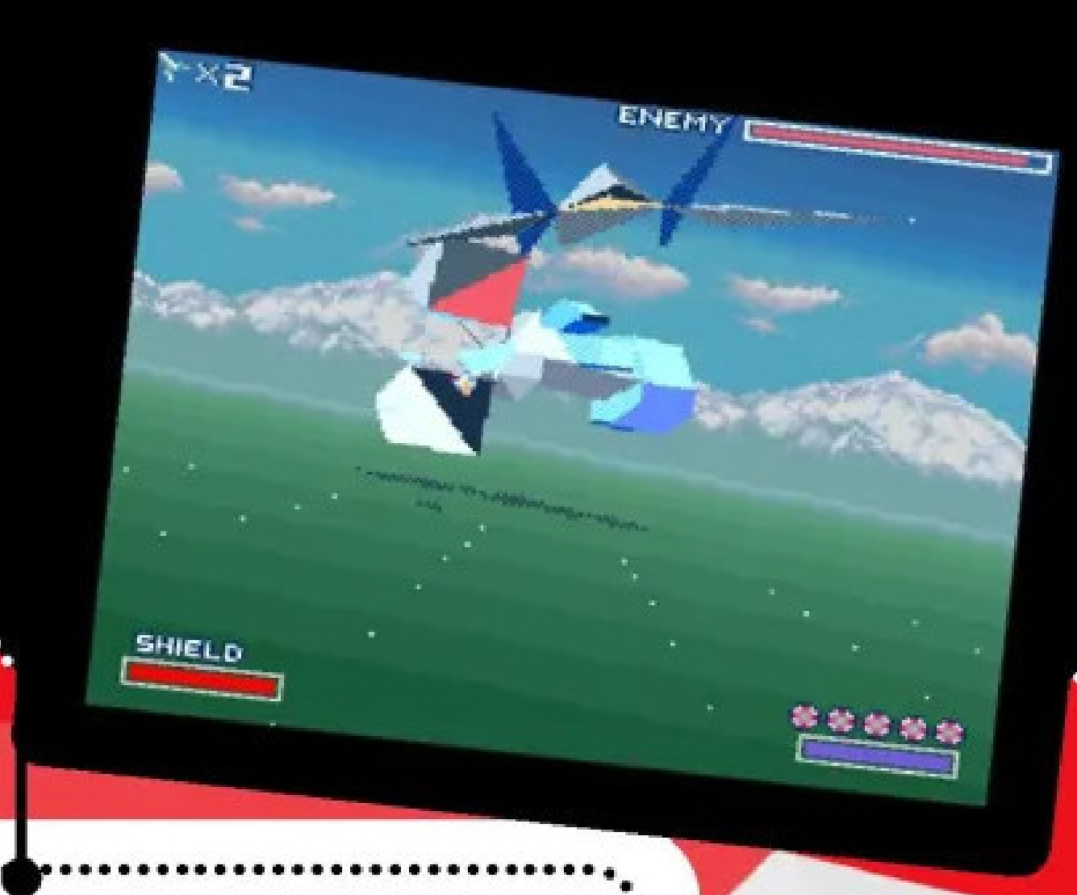
27 April 1992

■ Kirby couldn't yet copy enemy abilities in his first game.

STAR FOX LAUNCHES THE SUPER FX

21 February 1993

■ The Super FX chip came in certain SNES games and allowed them to show simple 3D graphics.



1990s

THE LEGEND OF ZELDA IS TOLD FOR THE FIRST TIME

21 February 1986

■ The first game was introduced on the Famicom Disk System in Japan and NES elsewhere.

METROID INTRODUCES SAMUS ARAN

6 August 1986

■ It's not obvious, but Samus is one of gaming's first female protagonists.

PLAYING WITH SUPER POWER

21 November 1990

■ The 16-bit Super Famicom is released in Japan, with international releases as the Super Nintendo Entertainment System. It faces strong competition from Sega's Mega Drive, but turns heads with its impressive Mode 7 pseudo-3D graphics, as seen in games such as *F-Zero* and *Super Mario Kart*.

Nintendo SUPER FAMICOM

MAKING MAJOR ADVANCES

21 March 2001

■ The Game Boy Advance arrives, representing the first major technological boost to the handheld line in over a decade thanks to its 32-bit CPU and improved graphics. The Advance SP replaces it in 2003, with a clamshell design, rechargeable battery and front-lit screen.

GAME BOY ADVANCE

THE GAME BOY GETS SOME COLOUR

21 October 1998

■ The Game Boy Color could add limited colour to original Game Boy games, too.

GAME BOY COLOR

THE 64-BIT ERA BEGINS

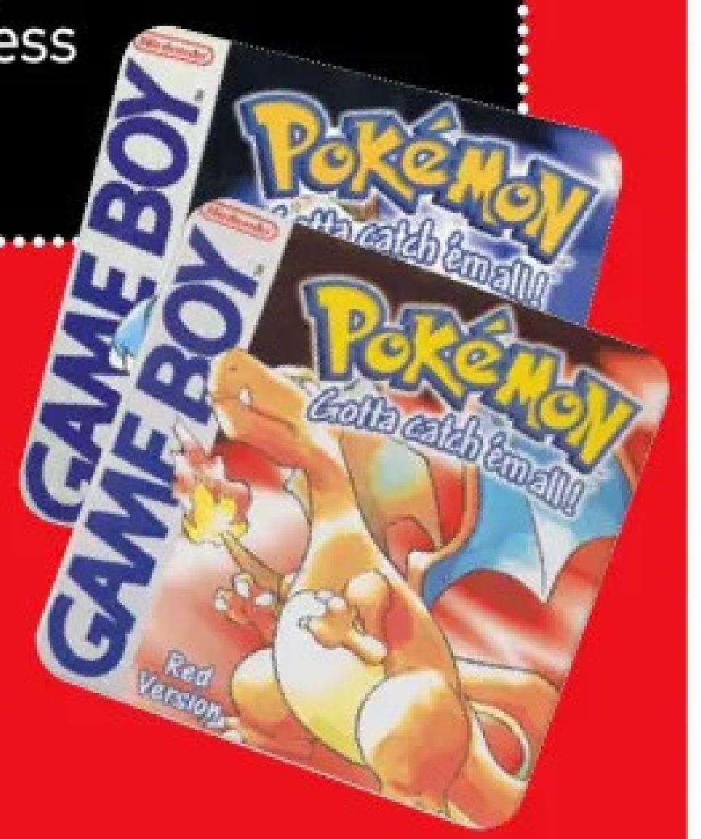
23 June 1996

■ The Nintendo 64 launches a year and a half after rival machines from Sony and Sega. It struggles with the Japanese audience and is outsold by the PlayStation worldwide, but plays host to groundbreaking 3D game design in games like *Super Mario 64* and *The Legend Of Zelda: Ocarina Of Time*.

THE POKÉMON JOURNEY BEGINS

27 February 1996

■ An RPG called *Pocket Monsters* appears on the Game Boy, introducing characters like Pikachu and Squirtle. Developed by Game Freak and published by Nintendo, it becomes a phenomenon spanning TV and movies, a card game and countless toys.



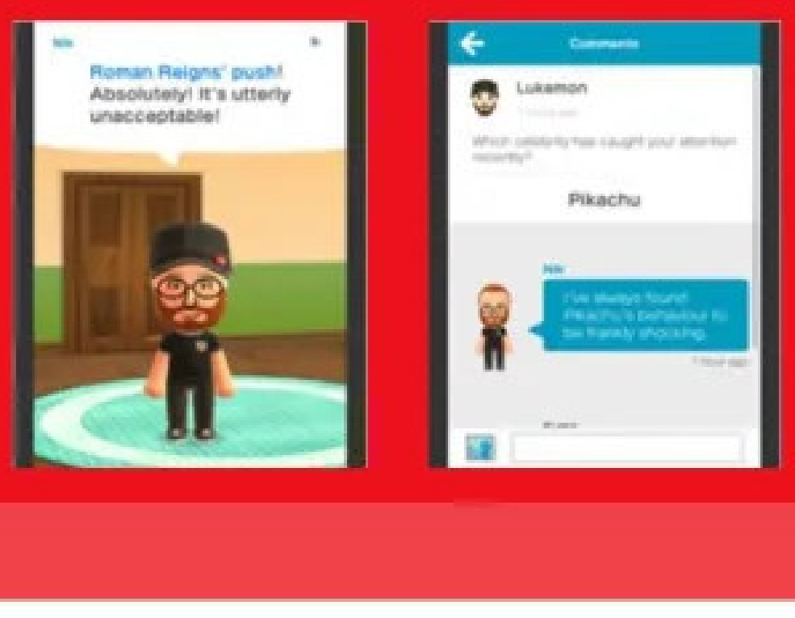
2000s

THE ULTIMATE CROSSOVER BATTLE COMMENCES

21 January 1999

■ *Super Smash Bros* brings together characters from *Mario*, *Zelda*, *Metroid* and other Nintendo series for the first time in a platform fighting game for the N64. HAL Laboratory handles development and creates a moderate hit, serving as the basis for a series that eventually becomes monstrously popular.

NINTENDO64



NINTENDO GOES MOBILE WITH MIITOMO

17 March 2016

■ Miitomo was a sort of light social networking app, with Mii characters.

NINTENDO SWITCH

SUPER MARIO BROS ON THE SILVER SCREEN

5 April 2023

■ This movie righted the wrongs of the dreadful 1993 *Super Mario Bros* movie.

SPLATOON MAKES A SPLASH FOR THE FIRST TIME

28 May 2015

■ *Splatoon* sells 4.95 million copies, becoming Nintendo's biggest new series since *Wii Sports*.

SWITCHING STRATEGIES

3 March 2017

■ Nintendo introduces the Switch, a hybrid home and handheld console that serves as successor to the Wii U and 3DS. *The Legend Of Zelda: Breath Of The Wild*, *Splatoon 2* and *Super Mario Odyssey* are highlights, and the console sells over 125 million units.

x10 Hardware images
© Evan Amos

DONKEY KONG
Nintendo
DONKEY KONG
Nintendo
1UP
003700
HIGH SCORE
007650
HELP!
L=00
BONUS
4400

Donkey Kong fact

- Mario can stop barrels rolling down ladders on the red cabinet versions of *Donkey Kong* if he sticks his hand over the top-most rung.

Donkey Kong

» DEVELOPER: Nintendo **» YEAR:** 1981 **» COST TODAY:** £1,000+

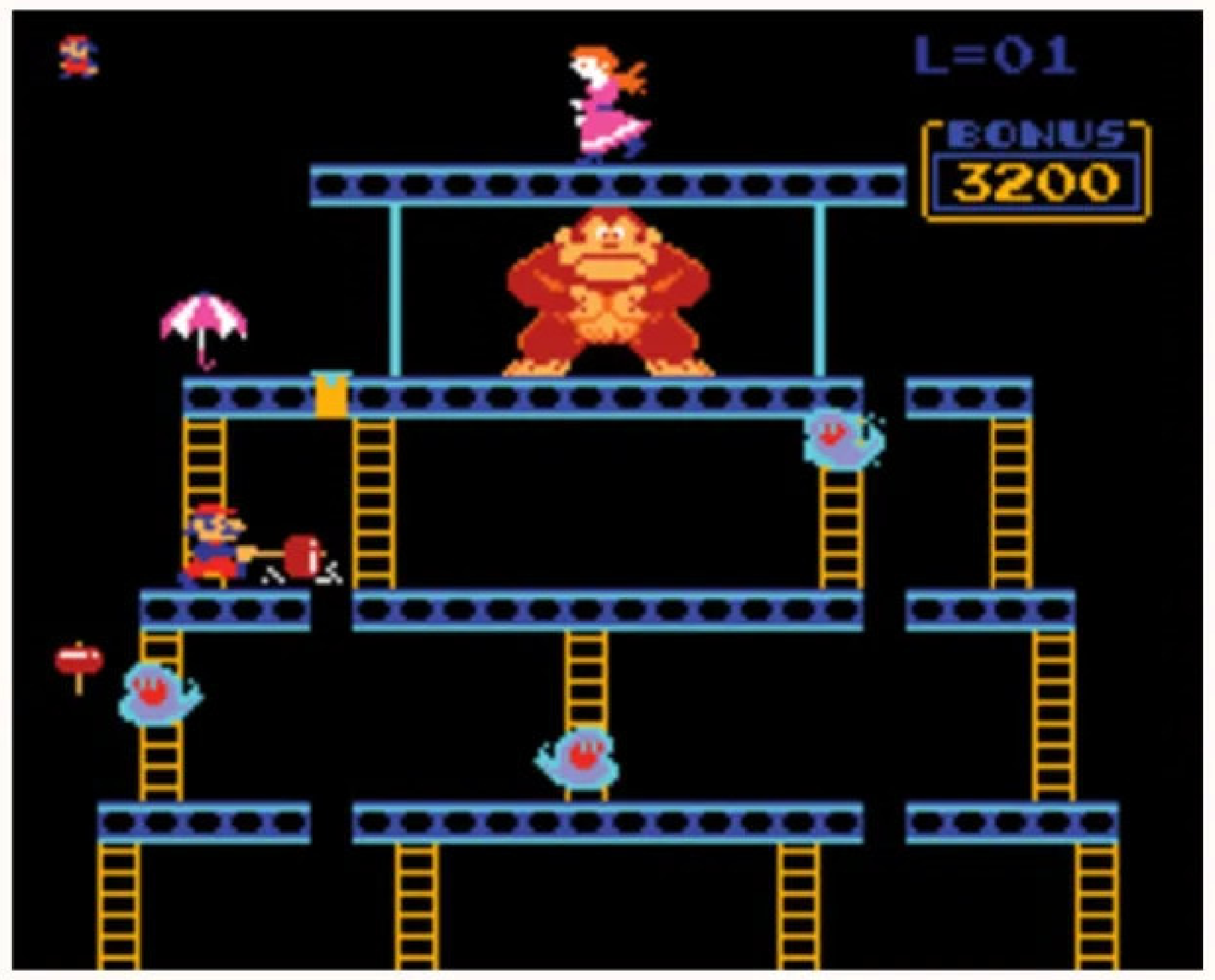
Few arcade cabinets exemplify their contents as well as Nintendo's *Donkey Kong* does. The beautifully bespoke cabinet not only uses thematic artwork to hint at the game's gameplay, but also has bright primary colours that match its cartoon-like visuals.

Several variations of the machine exist, including a particularly desirable cocktail cabinet and dinky cabaret versions, but we're focusing on the original standard 'vanilla' upright version (interesting fact, the blue-coloured cabs available are actually a later version of the game).

Continually rising in price (get ready to pay over £1,000 if you want one) *Donkey Kong* is arguably one of the most coveted cabinets that we've featured in Arcade Perfect, and it's desirable for a variety of reasons. It's important from a historical point of view as it's the game that helped change Nintendo's fortunes in the industry, it's the first game to feature Mario and it has one of the most hotly contested high scores of all time.

And let's not forget it's a fantastic game in its own right, thanks to excellent level design, tight and responsive controls and the sort of addictive gameplay that always drags you back for one more go.

STANDOUT MOMENT **It's Hammer Time**



Donkey Kong looks easy, but it's anything but. The increasing number of barrels that are thrown at Mario by the titular gorilla soon begin to fill the screen and it's all too easy to get taken out by a stray barrel or fireball. Sure Mario can jump like the best of them, but jumping only gets you so far and sometimes a mistimed leap will spell your doom. Thank goodness then for the hammer that appears on certain levels and allows Mario to destroy anything that gets in his way.

Nintendo ENTERTAINMENT SYSTEM

When Masayuki Uemura came to the UK in early 2016 to celebrate the 30th Anniversary of the NES, we went along to get the inside story of Nintendo's iconic first cartridge-based console from the man who designed it

Masayuki Uemura, the NES's creator, gives his head a little shake and laughs. "I thought the NES taking off was impossible," he admits. "I think Mr Arakawa [first president of Nintendo Of America], never thought it would either. But in the entertainment industry, the unexpected happens. I feel so grateful people still play the NES. I can't believe I'm here!"

Professor Uemura is sitting opposite us in the conference room of the National Videogame Arcade in Nottingham, speaking through his affable interpreter Akinori 'Aki' Nakamura. He has been invited by the NVA to give a talk about the creation of the Famicom, renamed the Nintendo Entertainment System or NES for its Western release, and seems genuinely surprised with the love that the console still generates three decades after it made it to our shores. The event has been sold out for weeks because though in the UK the NES itself never sold in the huge numbers it did in America, we all know what came next. Its worldwide success – 62 million units shifted puts it in the top ten of bestselling consoles of all time – led to the SNES, N64 and the Wii and first introduced us to such perennial favourites as *The Legend Of Zelda*, *Final Fantasy* and, of course, the all-conquering *Super Mario Bros.*. The NES truly announced Nintendo's arrival in the console business.

We have been granted a meeting with the man behind Nintendo's first cartridge-based machine before his talk. Uemura and Aki, both dressed in smart suits, bow politely and offer us their business cards. We nod awkwardly and in lieu of a calling card of our own, we present them with some locally brewed ale, which elicits slightly bemused but appreciative smiles. The mood suitably lightened, Uemura explains that just like Ralph Baer, the father of the home console, his background was in television technology rather than games. ▶

» Masayuki Uemura is the man who designed the Famicom/NES. He also created its 16-bit follow-up.

©1985 Nintendo®
Zapper™

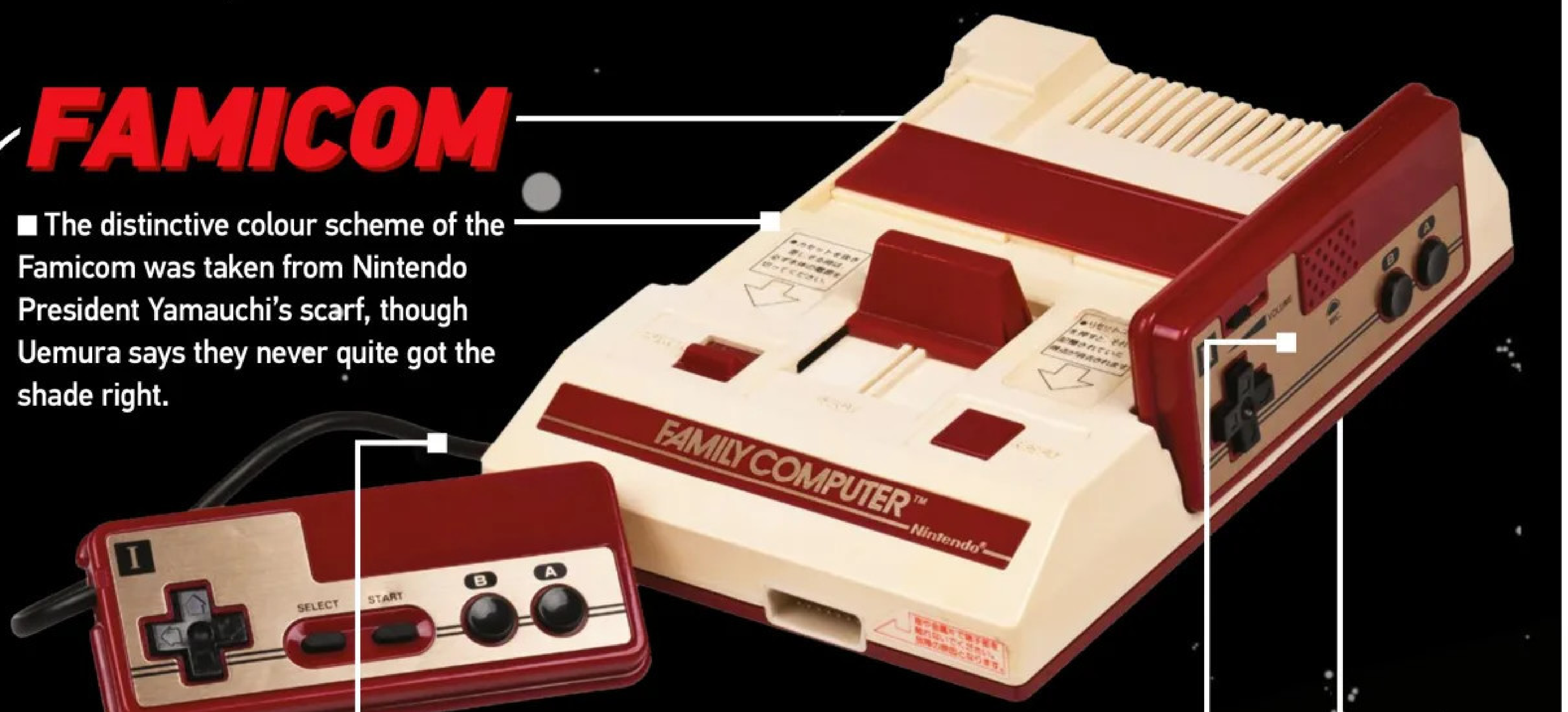
Nintendo
ENTERTAINMENT SYSTEM™
NES VERSION
POWER
RESET
1
2
SELECT START
Nintendo®
B
A
START
Nintendo®
B
A

™

SPOT THE DIFFERENCE

The many faces of Uemura's 8-bit console

FAMICOM

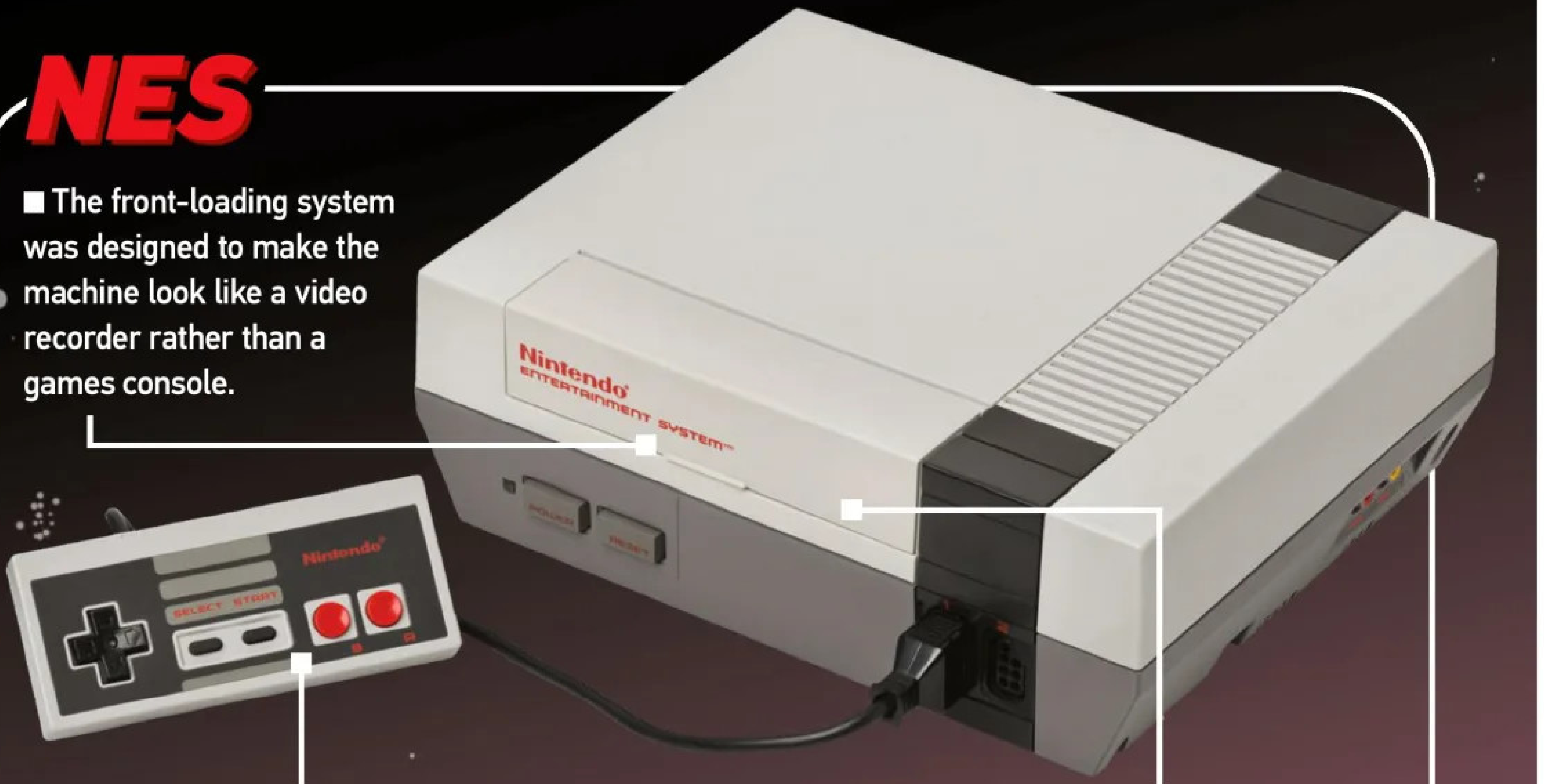


■ The distinctive colour scheme of the Famicom was taken from Nintendo President Yamauchi's scarf, though Uemura says they never quite got the shade right.

■ The controllers were wired into the console to save on production costs and could be clipped into place on either side of the machine.

■ The second controller had a built-in microphone which could be used as an input device, an idea clearly ahead of its time.

NES

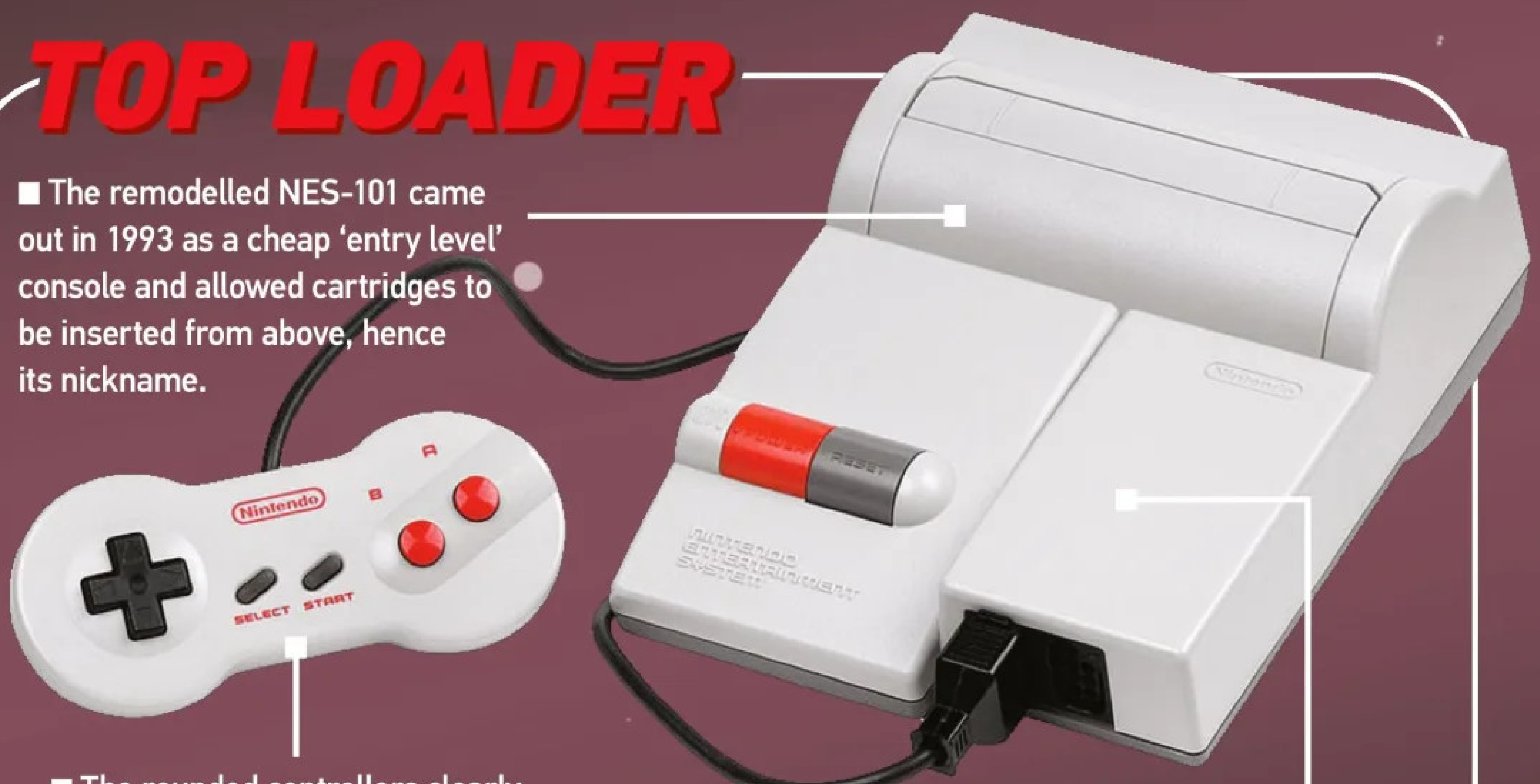


■ The front-loading system was designed to make the machine look like a video recorder rather than a games console.

■ The restyled controllers adopted the colour scheme and more angular look of the NES and could now be plugged in and out.

■ Cartridges were shielded once inserted to discourage children with wandering fingers getting an electric shock.

TOP LOADER



■ The remodelled NES-101 came out in 1993 as a cheap 'entry level' console and allowed cartridges to be inserted from above, hence its nickname.

■ The rounded controllers clearly used the same template as the SNES and were considerably more comfortable in the hand.

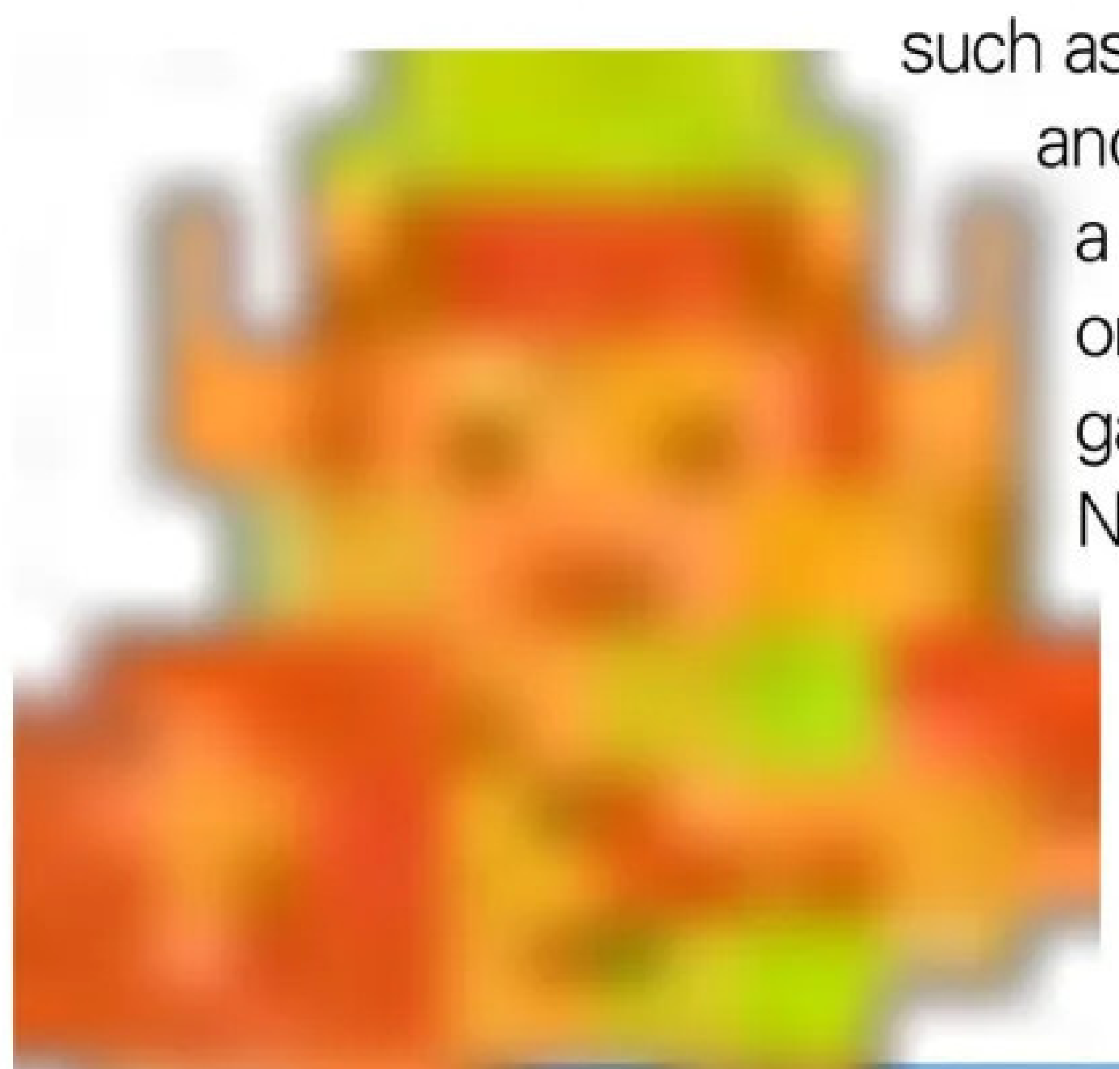
■ Its smaller size and sleeker appearance is something of a nod to design of the original Famicom, though grey still prevails.

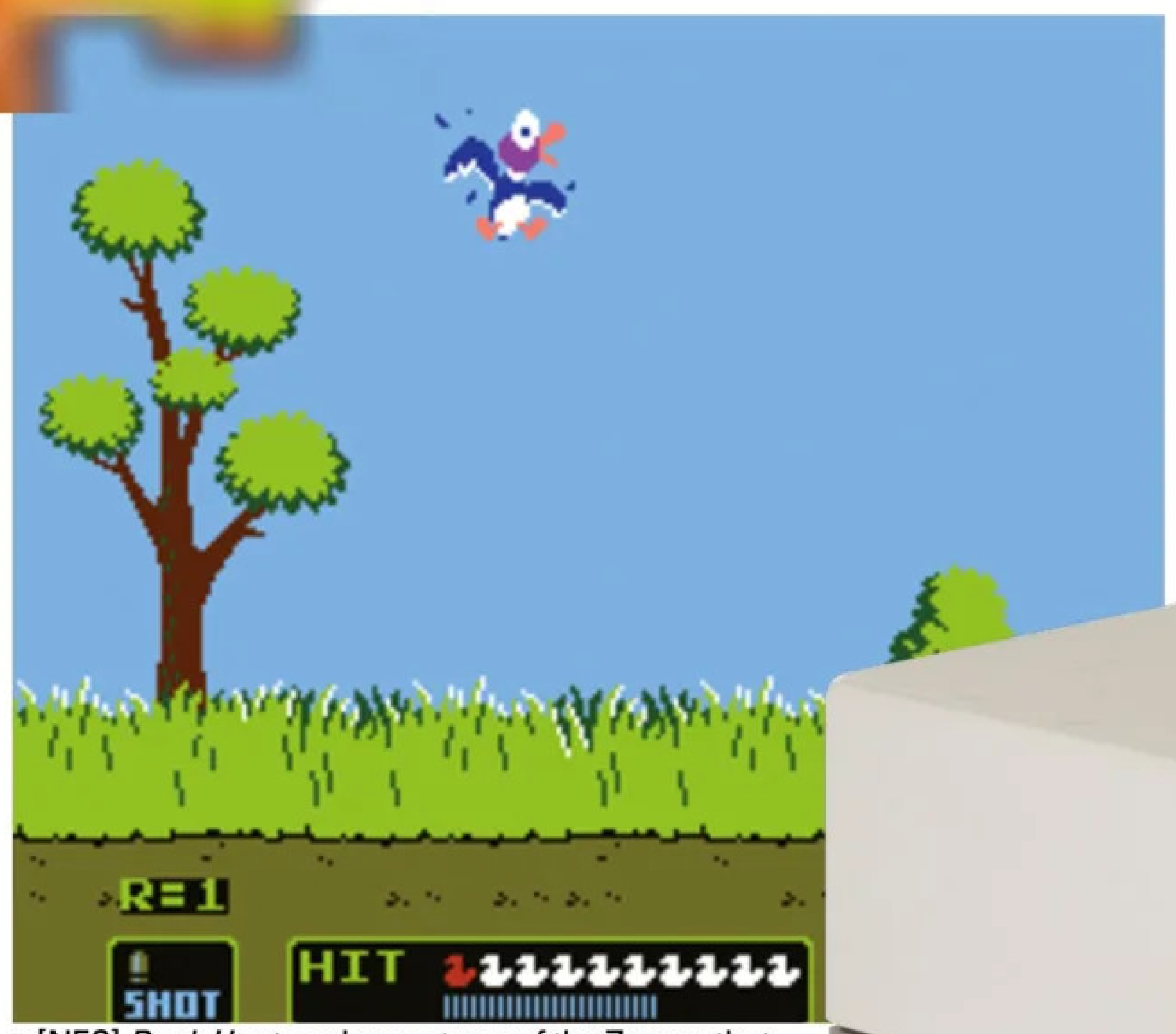
"I went to Sharp as an employee before Nintendo because I wanted to develop TV hardware," he says. "The fact I knew a lot about the hardware of a TV really helped when developing videogames. TV engineering is a good background for console development!"

Of course Nintendo itself was not yet involved in the emerging world of videogames when he joined in the early Seventies. The company had a long history of producing Hanafuda cards, something Uemura credits with instilling an obsession with the quality of Nintendo's output. These playing cards were used among the gambling fraternity and if your product was shoddy, you risked the ire of some potentially unsavoury types. "And you could play a lot of different games with them," he adds, "like a videogame console."

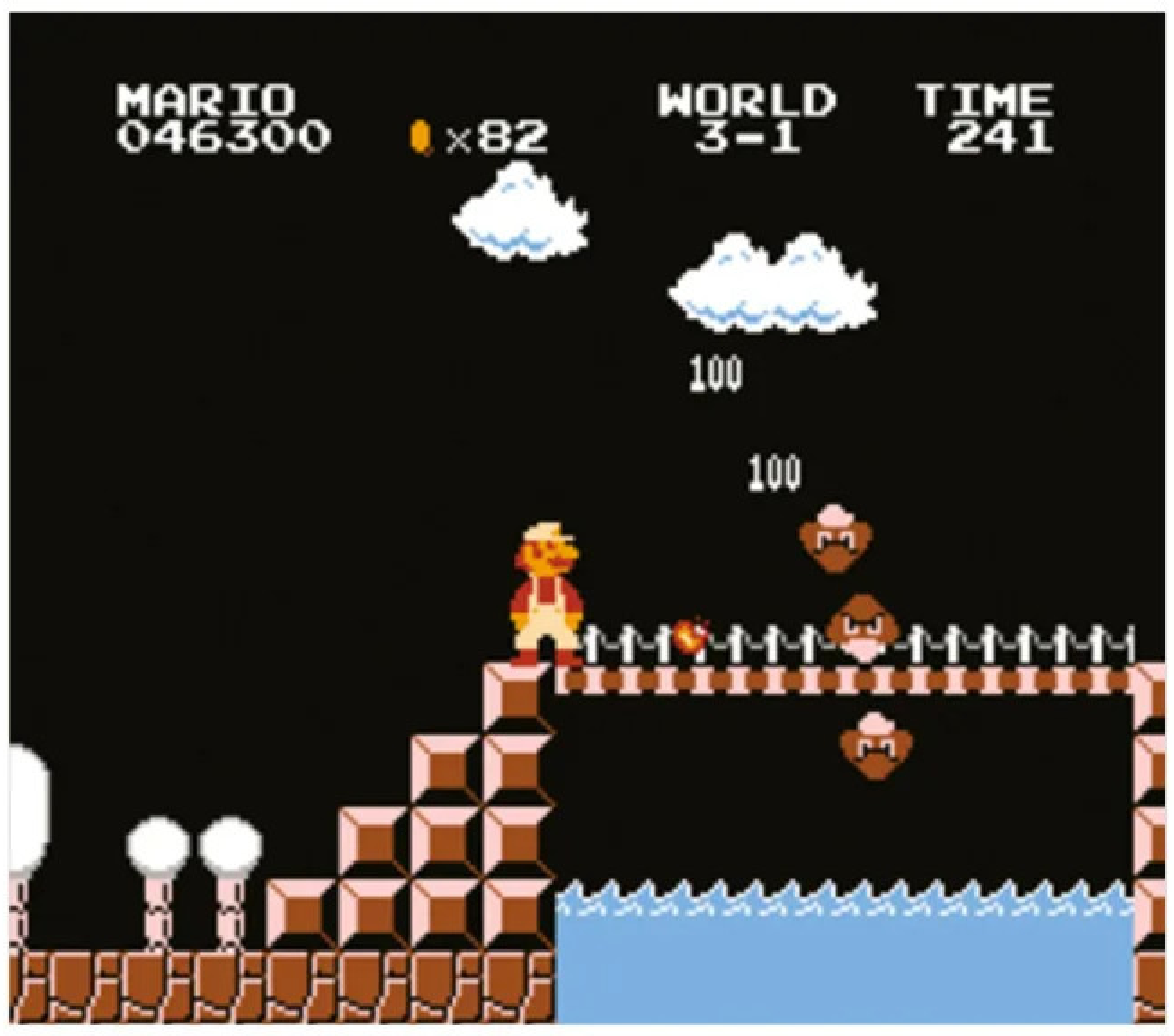
The famous 'Nintendo Seal Of Quality' may indeed have its origins in the ancient cards which the business had been built upon, though by the early Seventies the company was starting to experiment with electronic toys. One of the first projects Uemura was involved with was a lightgun game and Nintendo had some success in the public arena with its Laser Clay Shooting System and *Wild Gunman*, the latter game combining this lightgun technology with full motion videos of revolver-toting cowboys.

In the home market, 1974 saw Nintendo secure the rights to distribute the original games console, the Magnavox Odyssey, in Japan and so it was no surprise when it began releasing its own standalone TV games, which offered various flavours of *Pong* and sold in their millions in the latter half of the decade. Nintendo even produced dedicated machines such as *Breakout* clone *Block Breaker* and *Racing 112*, a generic driving game with its own steering wheel attached to the console but Uemura remembers the arrival of the all-conquering *Space Invaders* in 1978 made the company refocus on its arcade business. After a few moderate successes such as *Space Firebird* and *Space Fever* and a notable failure in *Radar Scope*, a coin-op shooter he worked on which left American arcade gamers distinctly unimpressed, Nintendo tried a different approach. Repurposing the 'fire' button as a 'jump' function, *Donkey Kong* was a huge hit in 1981 and had a profound effect not just





» [NES] *Duck Hunt* made great use of the Zapper that came with the NES and it still plays well today.



» [NES] *Super Mario Bros.* was an important release for Nintendo and massively boosted sales of the system.

» Uemura has been travelling the world talking about his famous console. He remains staggered by its incredible success.

on Nintendo's fortunes in the coin-op world, but in its console ambitions too.

"We licensed *Donkey Kong* to Coleco for their home console and of course we needed to evaluate it," smiles Uemura. "Coleco was a toy company, like Nintendo, so we had a long history of looking at what they were doing, not just with videogames. We looked at the specifications of their hardware and what they'd done with our licensed product. They had done a very good version of *Donkey Kong*, [quite] like the arcade game. That was a surprise! It made us feel confident…"

The commendable version of *Donkey Kong* that appeared on the ColecoVision not only became the 'killer app' for that console, it suggested to Nintendo the commercial viability of producing its own machine. Uemura, who at this stage was heading up the videogame division, certainly saw the potential of a cartridge-based system and, as early as 1981, began work on designs for what would become the Famicom, though not everyone shared his optimism.

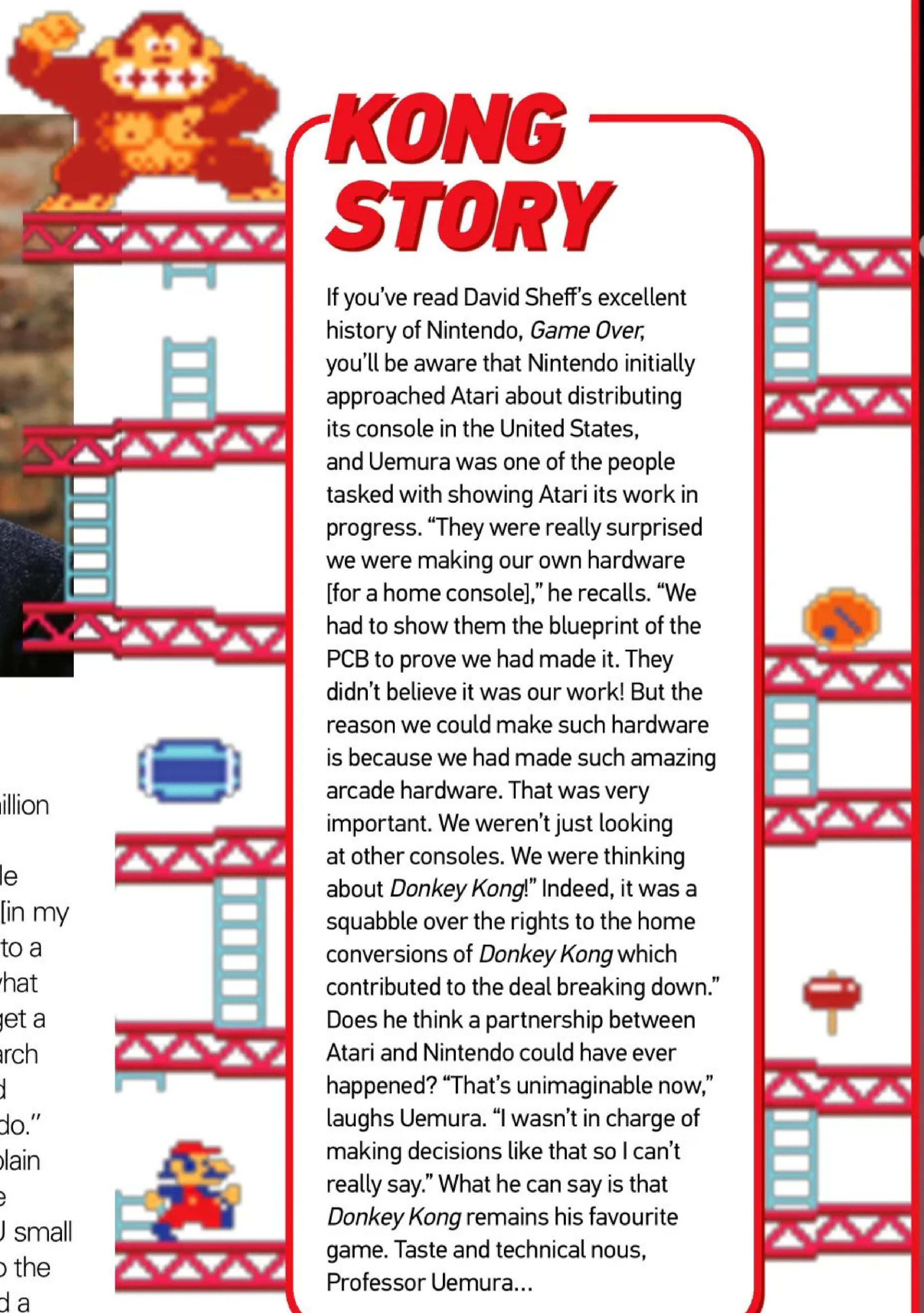
"Back then at Nintendo, no one was imagining we'd make a console with interchangeable cartridges because Game & Watch was huge," he says. "Everyone thought that was the kind of product we'd make in the future. All the engineers I had were dispatched over to that division to help them out. I couldn't do the work I wanted to do because of that."

The huge success of Nintendo's handheld series, particularly at the beginning of the Eighties when titles like *Turtle Bridge* and *Snoopy Tennis* sold over a million units, may have hindered progress on his console plans in the short term, but it gave Uemura valuable thinking space. "Because of the lack of personnel [in my division], I couldn't work, which meant I could talk to a lot of people outside of the company to find out what was going on. Of course, I talked to Atari. I could get a lot of information about console games. This research time was very precious if you think about it. I could come up with a specific idea of what I wanted to do."

Uemura leans back in his chair and starts to explain the thought processes which would determine the internal workings of his console. He wanted a CPU small enough to allow a sound chip to be integrated onto the board, thus keeping costs down, and Nintendo had a relationship with chip manufacturer Ricoh, whose 6502 processor would fit the bill. "But it was a huge problem within the company because *Donkey Kong* was made with a Z80," sighs Uemura, "so using a 6502, we couldn't use the source code. It was like throwing away a precious resource! I decided to do it anyway as chief engineer. Others said I could only do that because I wasn't programming it myself! It did mean we had to do *Donkey Kong* from scratch…"

At least Uemura considered the needs of those poor programmers tasked with converting the game to a new processor by consulting colleague Shigeru Miyamoto, the man behind *Donkey Kong*, when determining the colour palette of the Famicom. "He knew which colours would be needed to recreate his games," says Uemura, "and he would tell me how many colours the console would need [to display]. I would ask and he would answer. That was how we worked!"

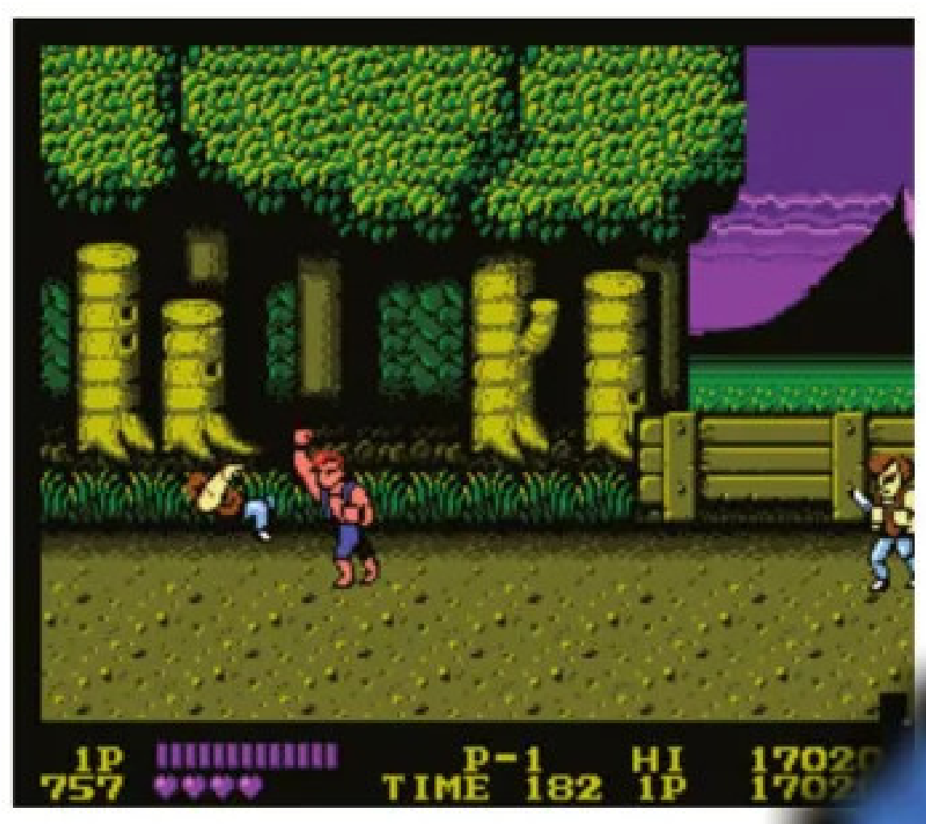
With some key hardware decisions made, Uemura and Nintendo also settled on cartridges as the storage medium for the console. "We had decided its sole function was to play videogames. If it's dedicated to that, we won't need to alter data, so we chose ROM over RAM but then in 1983, the USA had a big videogame shake-up with Atari. The media thought a games-only console was out of date. There was a buzz about home computers and Apple was getting big, too. I was afraid we wouldn't get media attention so I explained Family BASIC was on the way [to make the Famicom] like a home computer."



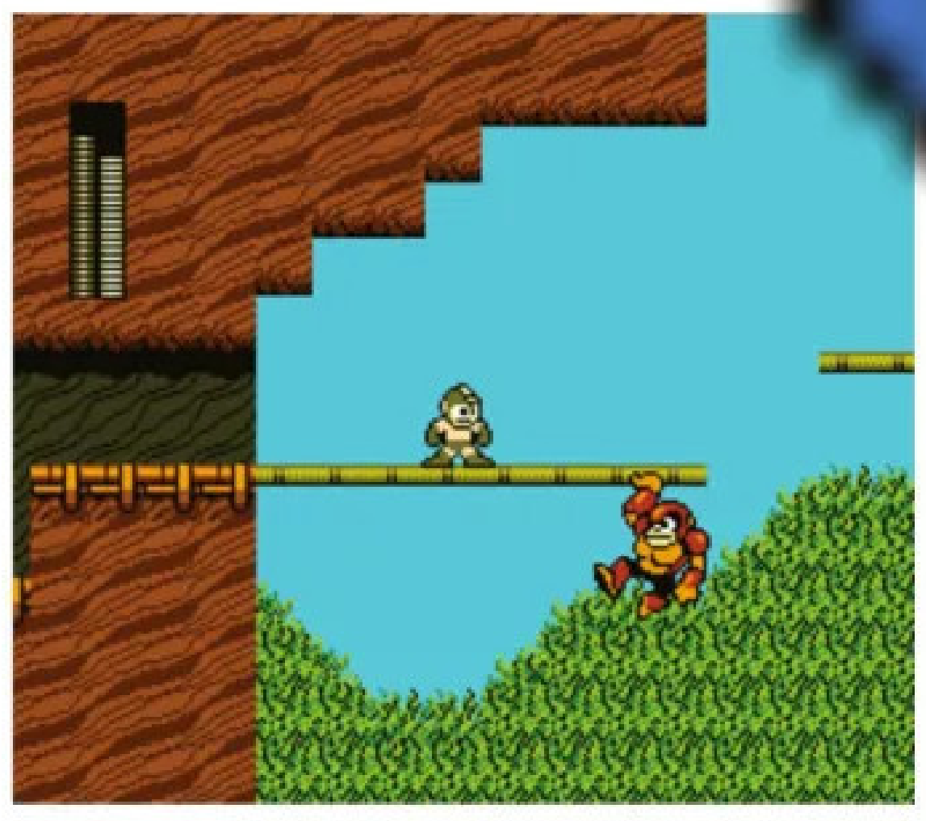
KONG STORY

If you've read David Sheff's excellent history of Nintendo, *Game Over*, you'll be aware that Nintendo initially approached Atari about distributing its console in the United States, and Uemura was one of the people tasked with showing Atari its work in progress. "They were really surprised we were making our own hardware [for a home console]," he recalls. "We had to show them the blueprint of the PCB to prove we had made it. They didn't believe it was our work! But the reason we could make such hardware is because we had made such amazing arcade hardware. That was very important. We weren't just looking at other consoles. We were thinking about *Donkey Kong*!" Indeed, it was a squabble over the rights to the home conversions of *Donkey Kong* which contributed to the deal breaking down." Does he think a partnership between Atari and Nintendo could have ever happened? "That's unimaginable now," laughs Uemura. "I wasn't in charge of making decisions like that so I can't really say." What he can say is that *Donkey Kong* remains his favourite game. Taste and technical nous, Professor Uemura…

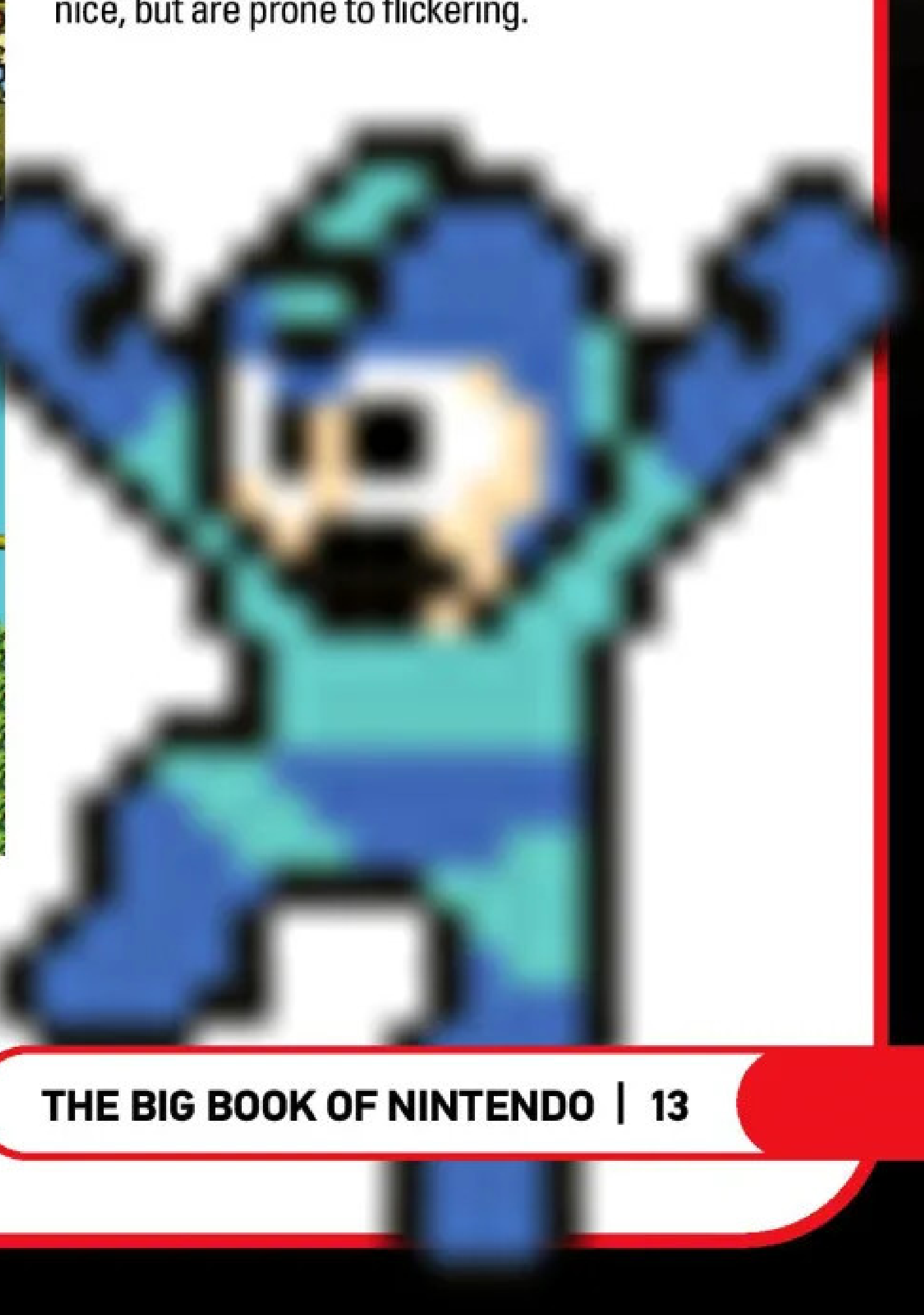
WrestleMania CHALLENGE
TEENAGE MUTANT NINJA TURTLES II THE ARCADE GAME
GODZILLA
SUPER MARIO BROS. 2
SUPER MARIO BROS. 3
Nintendo
SELECT START
Nintendo ENTERTAINMENT SYSTEM™ NES VERSION
POWER
RESET



» [NES] *Double Dragon* uses a limited number of tiles, but careful repetition provides a nice image.



» [NES] Complex multi-sprite images like this gorilla robot look nice, but are prone to flickering.

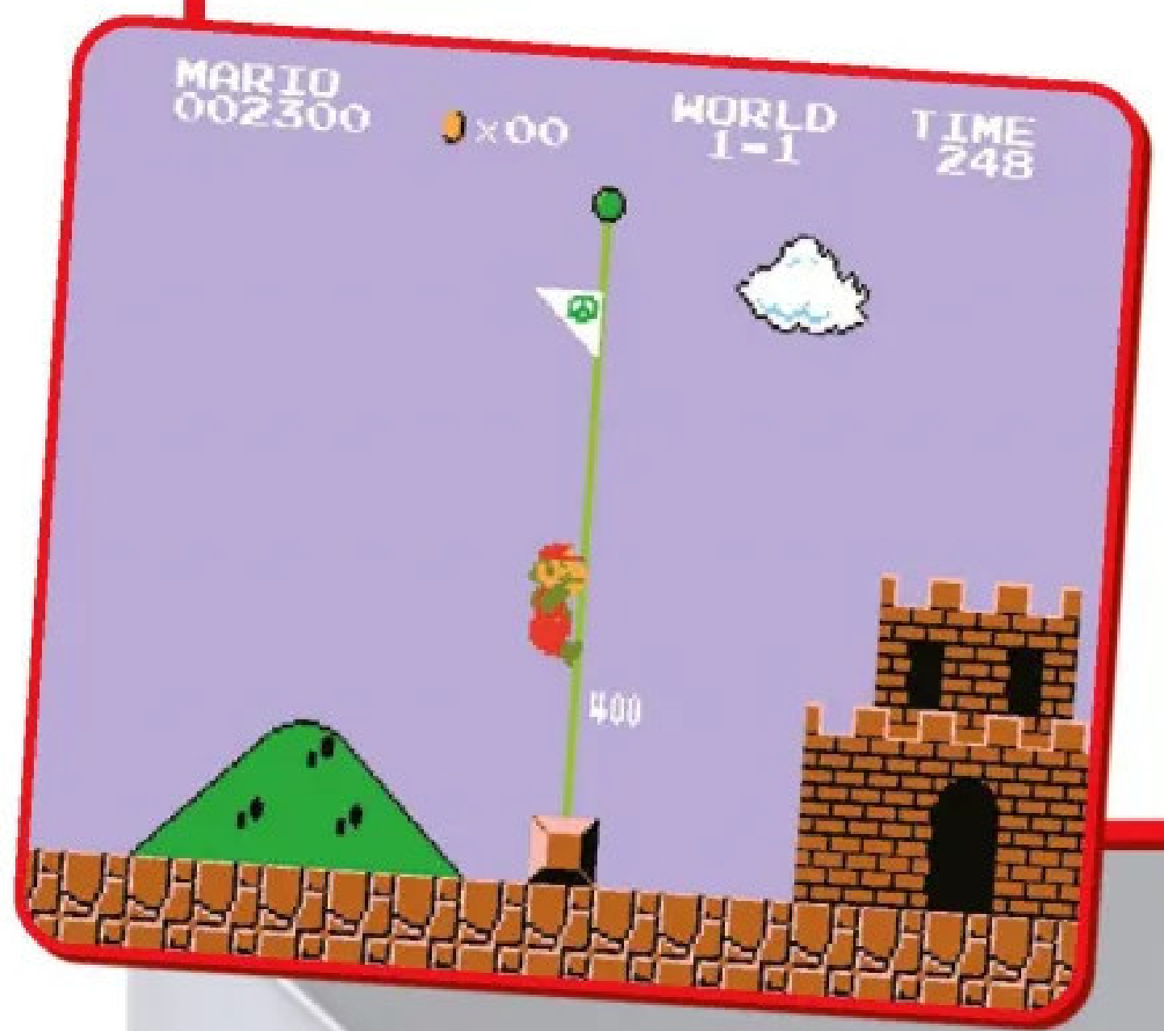


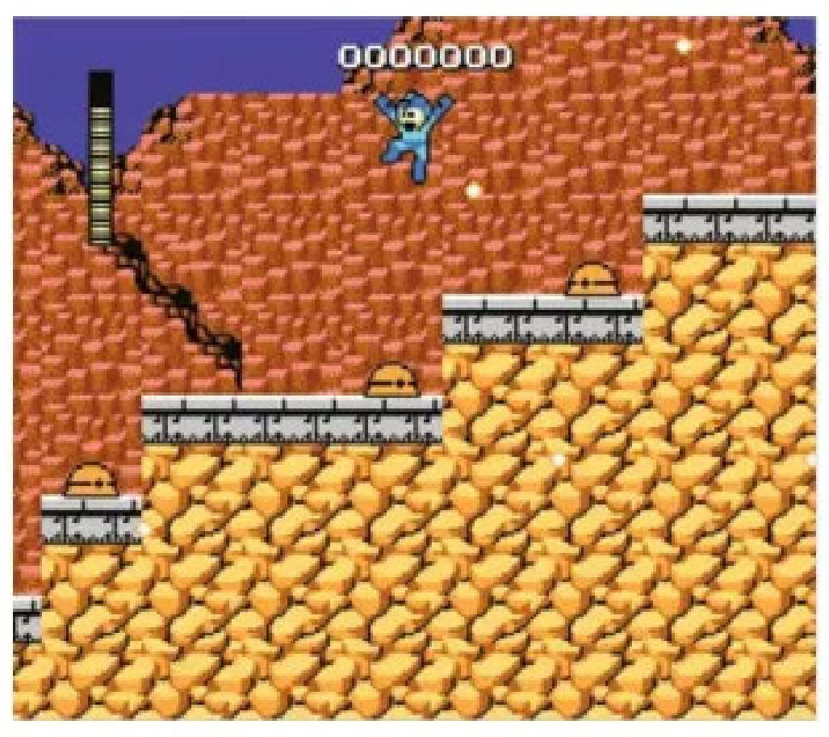
FRANCHISE STARTERS

The hit game series' that started on the NES

SUPER MARIO BROS.

■ Of course he had appeared in *Donkey Kong*, albeit with a different name and profession, and Mario and Luigi had already starred in a frenetic coin-op, but this is where the brothers really showed the world what they could do. *Super Mario World* may be top of many gamers' favourite games of all time lists but this is where it all began.





MEGA MAN

■ Rock hard – that's the man himself and the level of difficulty typical in this long-running series which debuted in 1987. The side-scrolling run-and-gun action of the original has you leaping platforms and blasting foes with a weapon handily attached to his arm. Defeating bosses rewards you with new weapons and so the carnage continues.

LEGEND OF ZELDA

■ After Mario, Link must surely be Nintendo's best-known hero and he too began his princess-saving career on the NES. The original game was a launch title for the Famicom Disk System in 1986 before appearing in cartridge form for the NES a year later and established the action adventure template for this superlative series.

CASTLEVANIA

■ Another game that first appeared on the Disk System, it arrived on cartridge for the NES in 1987 and introduced Simon Belmont, vampire hunter and whip-cracker extraordinaire, to the gaming world. The first game is a solid platformer but if you're new to the series, you may want to start with *Symphony Of The Night* on the PlayStation.

FINAL FANTASY

■ With the 15th instalment released in 2016, not to mention the host of spin-off titles, this may seem the most inappropriately named franchise in gaming history but when Hironobu Sakaguchi created the original for Square in 1987, it was reputedly his last gasp attempt to have a hit game. Its success means we've been playing them ever since.

METROID

■ The series with the most famous reveal, in both senses of the word, in videogame history, began on the Disk System in 1986. Combining exploration, combat, platforming, atmospheric aesthetics and a little brainwork too, this laid the foundations for some truly excellent episodes, particularly *Super Metroid* for the SNES.

Nintendo
ENTERTAINMENT SYSTEM™
NES VERSION
Nintendo®
SELECT START
B A

NINTENDO
3RD 1:18:00
TEMP
TIME 0:51:08

▶ Nintendo did indeed produce a keyboard and data recorder package along with its own dialect of BASIC in 1984, allowing users to tinker with its own game creations within some fairly restrictive parameters and though it hardly turned the console into a fully-fledged home computer, it did show Nintendo was prepared to experiment with new ideas.

This is perhaps best illustrated when it came to designing the controllers for the console. We have brought along a NES pad, and we hand Uemura the grey rectangle with its distinctive D-pad and bright red buttons, asking if he was responsible for designing this iconic piece of hardware. "It was the most difficult choice I had to make," he says, cradling the controller like a beloved child. "I had designed arcade games [in the past] and they used joysticks. The engineers I was working with on the Famicom said, 'We have to use a joystick!' But there was one guy who had gone over to work on the Game & Watch [team]. He came back to our project and he brought the control unit created for the multi-screen *Donkey Kong* Game & Watch to our division. He took out the screen and connected the electronics to the Famicom and we played!"

Previous entries in the Game & Watch series had only needed buttons for left and right but *Donkey Kong* required upward movement so Mario, or Jumpman as he was known back then, could rescue his love interest. A joystick clearly wouldn't work with a folding dual-screen handheld, so the revolutionary D-pad was created and Uemura realised this would be ideal for his new console. "Naturally, we could have used a joystick but we were thinking of [the Famicom] as a toy and toys you put on the floor. Children might step on a joystick and it could hurt their feet… and break the controller! Also, when we played, *Donkey Kong* Game & Watch we found we were only looking at the top screen. With a TV screen, you only look at that, not the controller. You need that sense, just using your fingers."

Of course, it proved to be an excellent design decision and the ergonomically sound D-pad would become the industry standard for decades to come, even today, all of the current-generation consoles use it in one way or another. Not all the innovations of the Famicom controller were to be as influential, though, at least not in the short term. Uemura took the unusual step of including a microphone in the second controller, partly inspired by Japan's enduring love affair with karaoke. Was he really considering *Singstar*-style games at the start of the Eighties, we ask?

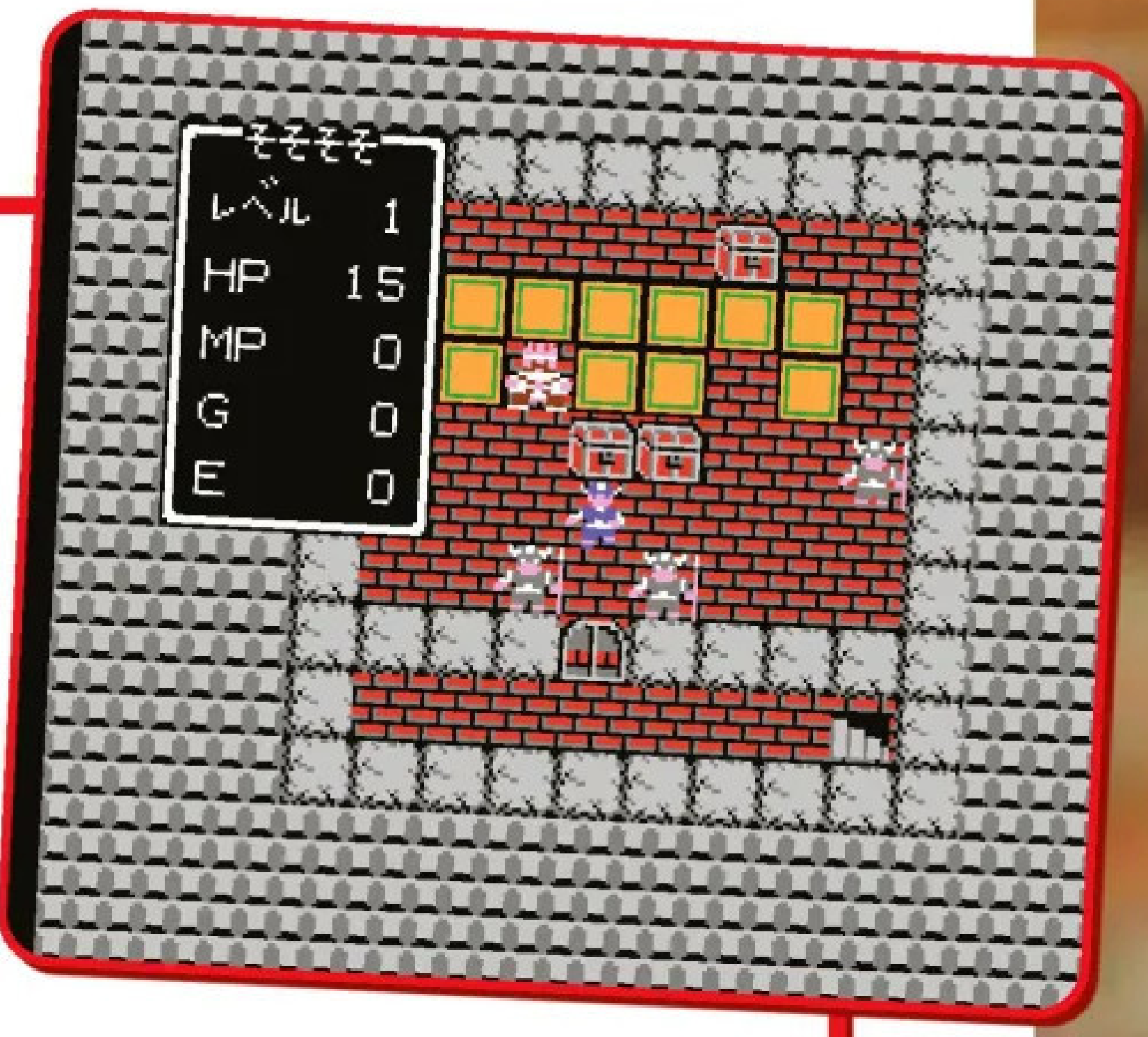
"I was thinking about it," he nods. "I was also thinking about using the voice to play the role of the controller in games. I made sure the voice coming in from the microphone could be responded to by the CPU but only a few titles came out that made use of that function."

Clearly, it was an idea ahead of its time. With the Famicom project nearing completion and the core hardware taking shape nicely, there were still some cosmetic decisions to be made. It was decided that the cartridges themselves should be the same size as audio cassettes, allowing Japanese consumers to use pre-existing household furniture and containers to store their burgeoning game collection, and then there was the colour of the machine itself.

"We discussed the colour of the console a lot," remembers Uemura. "Should we make it look like a toy or more like serious hardware? In the end, President Yamauchi's favourite colour was red and so we used the same shade as his muffler."

If you're now worrying about Yamauchi's health – specifically his nose – we can assure you that we clarified exactly what Uemura meant by 'muffler' and were relieved to find he was referring to the President's scarf. Thus the aesthetically pleasing strawberries-and-cream colour scheme of the Famicom was agreed on… except the console wasn't called that yet. The machine was not given its name until shortly before its release and Uemura explains his very personal connection with the naming process with obvious pride.

"I always talked about work stuff with my wife. She was always willing to listen. I told her the name [of the console] had not been decided and it was taking a long time to come up with a good name. There were already 'personal computers' in Japan and we were discussing that [our console] was not 'personal', it was right there for everyone, so it had to be 'family', didn't it! My wife said, 'Okay, but it has to be Famicom. You have to make it shorter!'

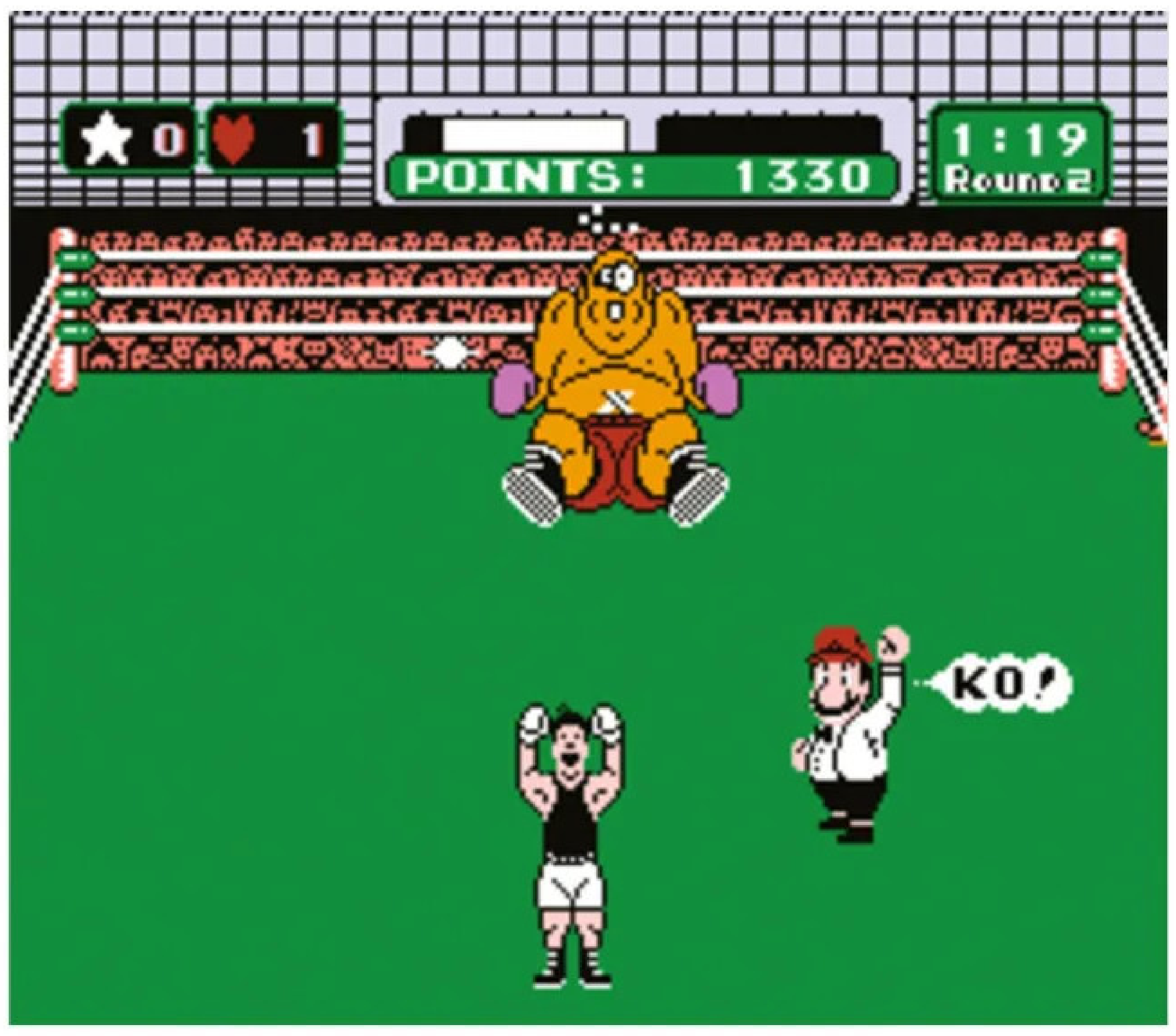


BATTLETOADS

■ Though Japanese and American developers dominated the NES release schedules, the console did at least have one notable British success story. Tim and Chris Stamper established their reputation for excellence on the ZX Spectrum as Ultimate but having changed its name to Rare, began a long and fruitful relationship with Nintendo.

DRAGON QUEST

■ A long-running series from Enix that started out on the NES, *Dragon Quest* (or *Dragon Warrior* as early titles were known in the West) helped popularise RPGs and establish mainstays of the genre, from turn-based combat and random encounters to controlling a party of adventurers as they battle to save the day.

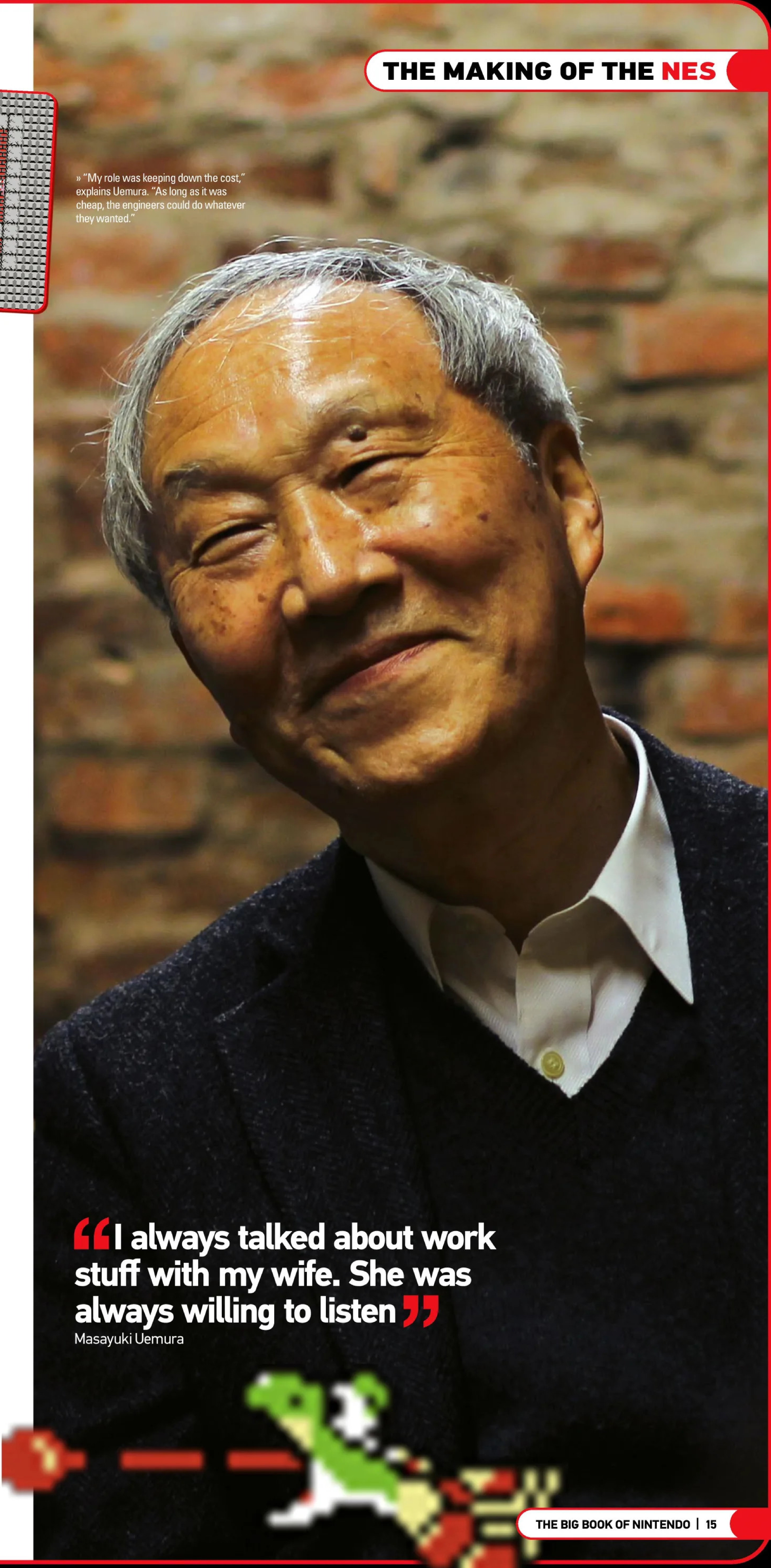


» [NES] *Mike Tyson's Punch-Out!!* was superb, being a slick adaptation of Nintendo's popular arcade game.

I took that idea straight to the company, that it should be 'Famicom'. President Yamauchi said, 'What the heck is that?!' He really didn't like it. I explained this wasn't just a 'personal computer', it was for all the family and that we Japanese tend to shorten everything and I thought it was a good name. He said, 'No, it's not a good idea to shorten [the words] at the beginning. If people want to start calling it that later, that's okay, but at the start, we needed to call it 'Family Computer.' So that's how the name came about!"

Nintendo's Family Computer was launched in Japan in 1983 and, according to Uemura, it sold 400,000 consoles that year, a respectable number though he is quick to point out that to be considered a 'hit' you needed to shift a million units. Moreover, defects in some of the graphic chips created by Ricoh and problems with the joypads soon became apparent. The Famicom had its controllers hard-wired to the console, which was a cheaper option than providing a joypad connector but proved costly in the long run. Nintendo hadn't anticipated passionate gamers mashing and yanking their controllers so aggressively in the heat of play and a damaged joypad meant the whole console was unusable. "The main thing I remember from that time is the defective consoles being returned," sighs Uemura, who estimates a staggering 100,000

▶



» "My role was keeping down the cost," explains Uemura. "As long as it was cheap, the engineers could do whatever they wanted."

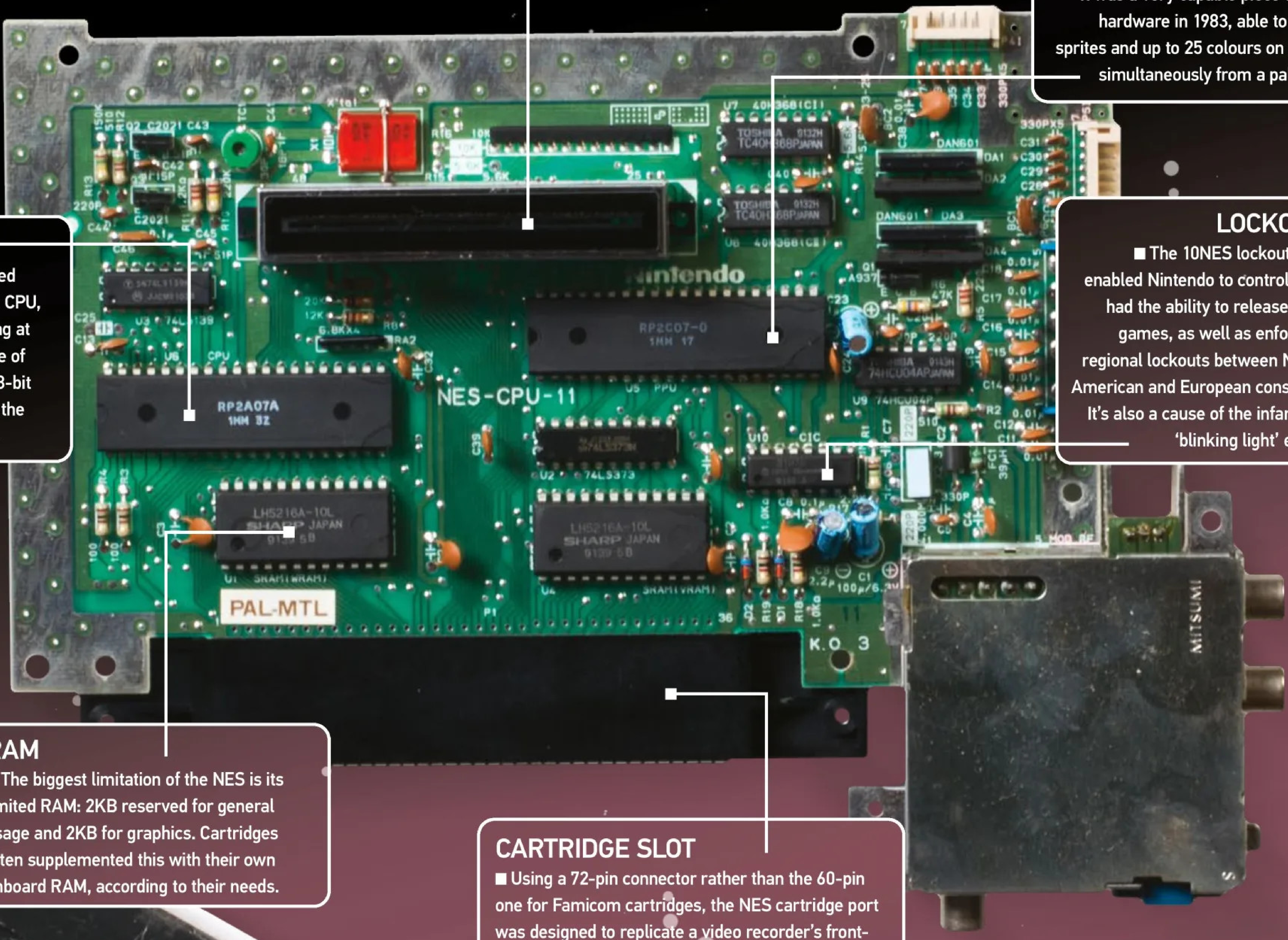
> "I always talked about work stuff with my wife. She was always willing to listen"
> Masayuki Uemura

Nintendo
ENTERTAINMENT SYSTEM™
NES VERSION

SUPER MARIO BROS. 3
Nintendo

UNDER THE HOOD

Here's a look at the key components of the NES



EXPANSION PORT

■ This expansion port was included for the possibility of any extra add-on devices for the console, such as disk drives and modems. However, none of the projects using the expansion port ever saw the light of day, so it's a vestigial connector.

PPU

■ The Picture Processing Unit was custom-built for the NES, again by Ricoh. It was a very capable piece of graphics hardware in 1983, able to display 64 sprites and up to 25 colours on the screen simultaneously from a palette of 54.

CPU

■ The Ricoh 2A03, a modified version of the popular 6502 CPU, is an 8-bit processor running at 1.79MHz. It's a close relative of the CPUs used in the Atari 8-bit range, the Commodore 64, the Apple II and the BBC Micro.

LOCKOUT

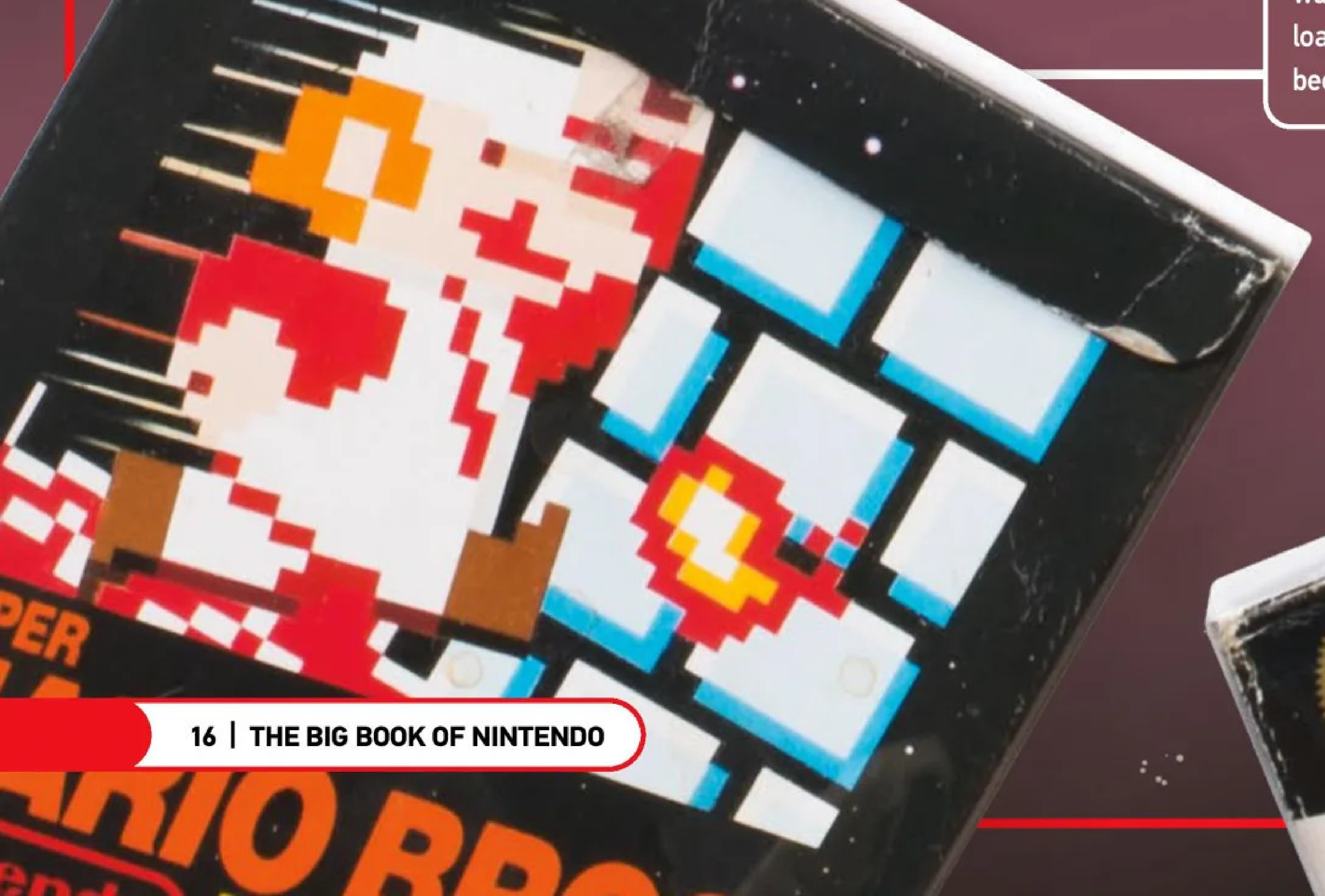
■ The 10NES lockout chip enabled Nintendo to control who had the ability to release NES games, as well as enforcing regional lockouts between North American and European consoles. It's also a cause of the infamous 'blinking light' error.

RAM

■ The biggest limitation of the NES is its limited RAM: 2KB reserved for general usage and 2KB for graphics. Cartridges often supplemented this with their own onboard RAM, according to their needs.

CARTRIDGE SLOT

■ Using a 72-pin connector rather than the 60-pin one for Famicom cartridges, the NES cartridge port was designed to replicate a video recorder's front-loading mechanism. However, the pins can easily become bent and dirty, leading to errors.

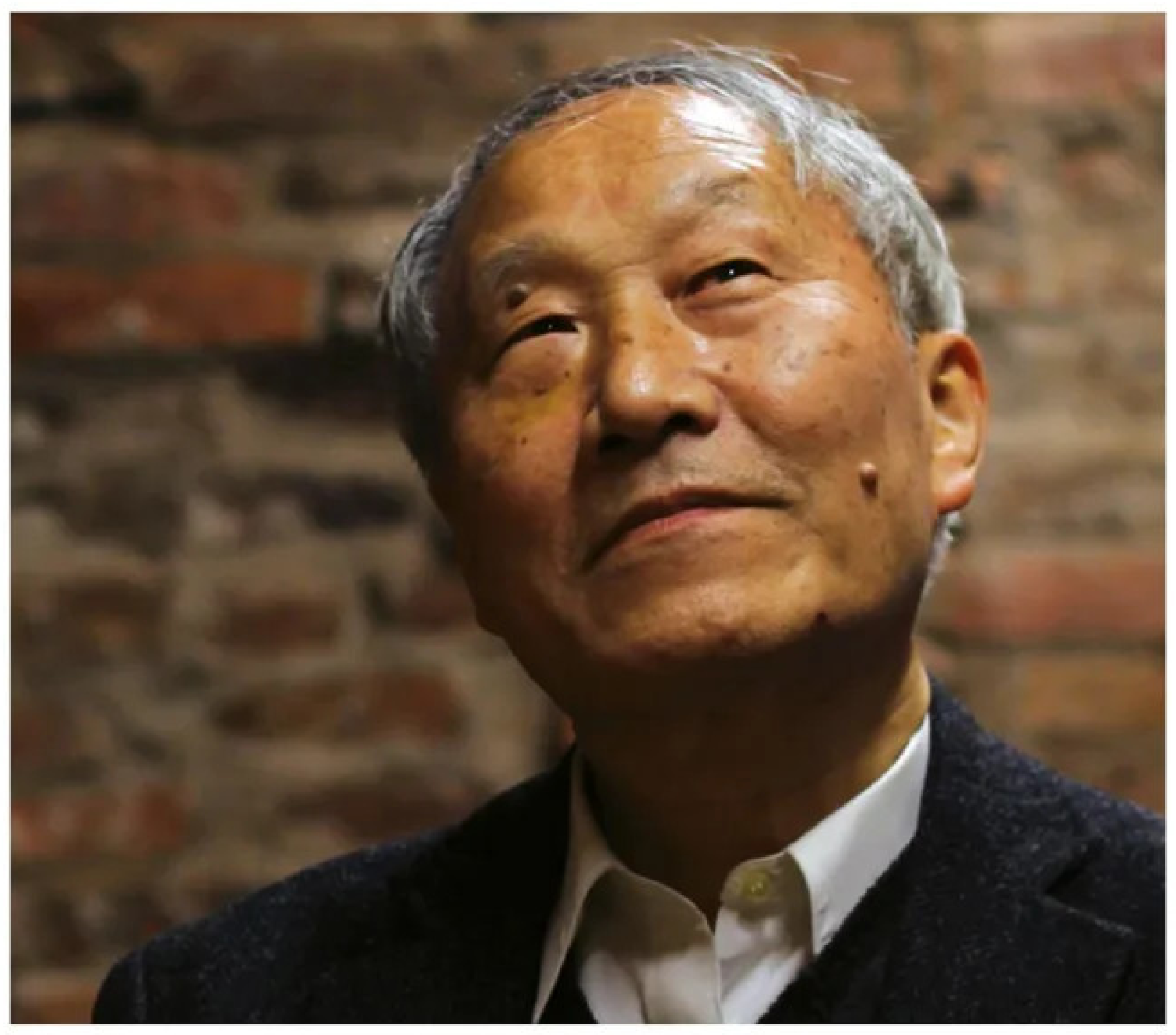


METAL GEAR
ULTRA GAMES

Nintendo
ENTERTAINMENT SYSTEM
NES VERSION

X17
B
A
-LIFE-
X0
X0

» [NES] Like several high-profile releases, *The Legend Of Zelda* started off life on the Famicom Disk System.



» "We didn't want the sound to be too annoying in the house, even if it was played repeatedly," says Uemura of the Famicom's audio.

▶ faulty Famicoms came back during that first year. "All these problems we had to overcome! The whole company had to get involved to resolve them. Yes, I felt pressure but it was exciting because everyone was helping us out."

The company rallied round its new venture, partly, suggests Uemura, due to increased competition in the handheld market previously dominated by Game & Watch, and by the end of 1983, its stocks of the Famicom had sold out. "I thought that was the end of it," he shrugs. "Personally, I was pessimistic but then in February 1984, distributors started asking me when we were making more! Kids were asking for it. There is a custom in Japan for grandparents to give money to children and this is what they wanted to spend it on!"

Though Uemura maintains the initial launch of the Famicom in his home nation was generally viewed as 'a failure', there was still talk of the company learning from its mistakes and revamping the console for the US market. Nintendo did, at least, have some indication that its videogames were valued across the Pacific. The Nintendo Vs. System was doing well in American arcades and Uemura recalls seeing the February 1985 edition of trade magazine *PlayMeter* showing Nintendo titles such as *Vs. Tennis* and *Vs. Pinball* dominating the charts. Nintendo were still producing games that people wanted to play but the negative image of home consoles which had followed the spectacular downfall of Atari and other key industry players was a significant barrier to overcome.

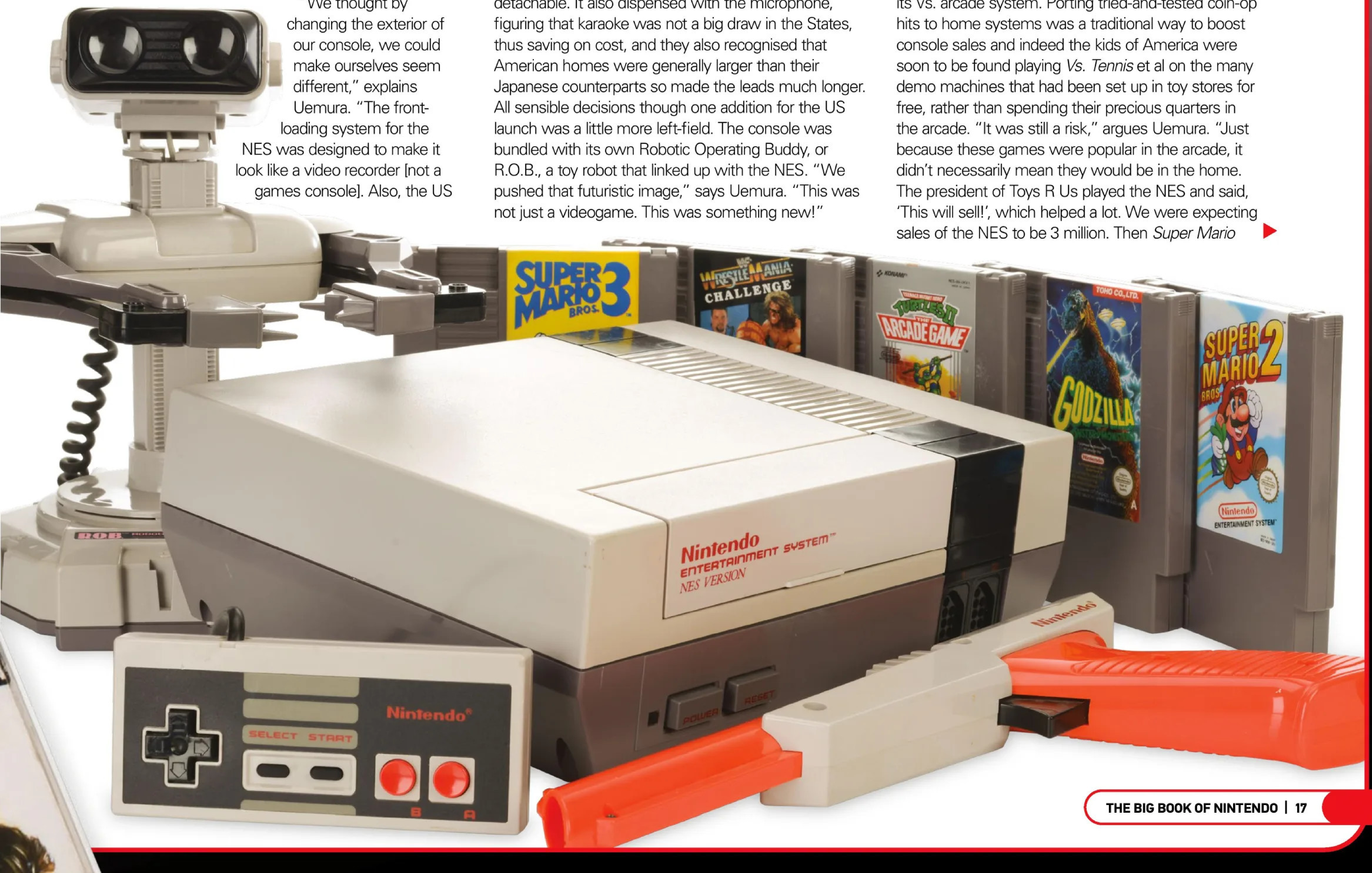
"We thought by changing the exterior of our console, we could make ourselves seem different," explains Uemura. "The front-loading system for the NES was designed to make it look like a video recorder [not a games console]. Also, the US is a dry country so we wanted to shield the cartridges… we didn't want children getting [an electric] shock!"

There were other, more physical, concerns that influenced the redesign of the Famicom for the American market. "The hands of American children are bigger than Japanese children. We were worried they might find it hard to use the controller. Also, they didn't have D-pads but we thought this might make our console stand out from those that used joysticks."

After the problems with the controllers in Japan, Nintendo decided to make the NES controllers detachable. It also dispensed with the microphone, figuring that karaoke was not a big draw in the States, thus saving on cost, and they also recognised that American homes were generally larger than their Japanese counterparts so made the leads much longer. All sensible decisions though one addition for the US launch was a little more left-field. The console was bundled with its own Robotic Operating Buddy, or R.O.B., a toy robot that linked up with the NES. "We pushed that futuristic image," says Uemura. "This was not just a videogame. This was something new!"

The team also emphasised the primary 'entertainment' function of the machine by renaming it the Nintendo Entertainment System, a title which was only decided a month before the console's launch in the United States. Besides, the 'Family Computer' tagline had been used by rival manufacturer Mattel in its advertising for its Adam computer. Nintendo also included the NES Zapper in the package, after extensive market research had returned a not altogether unexpected finding. "Americans like guns", says Uemura, with a wry smile.

The NES launched in the United States in 1985 along with 17 games, predominantly titles taken from its Vs. arcade system. Porting tried-and-tested coin-op hits to home systems was a traditional way to boost console sales and indeed the kids of America were soon to be found playing *Vs. Tennis* et al on the many demo machines that had been set up in toy stores for free, rather than spending their precious quarters in the arcade. "It was still a risk," argues Uemura. "Just because these games were popular in the arcade, it didn't necessarily mean they would be in the home. The president of Toys R Us played the NES and said, 'This will sell!', which helped a lot. We were expecting sales of the NES to be 3 million. Then *Super Mario* ▶



MORE FROM UEMURA

COLOUR TV GAME SYSTEM

■ Nintendo took its first tentative steps as a console manufacturer in 1977 with the Color TV-Game 6. Featuring half a dozen versions of *Pong*, it was shortly followed by TV-Game 15, which served up more bat-and-ball games and added wired controllers, making it considerably more user-friendly. If you have a white version of the original unit, you have a real rarity as, apparently, only a few hundred were ever produced.

DISK SYSTEM

■ This Japanese-only peripheral allowed a disk drive to be attached to the Famicom console via the cartridge port and used bespoke floppy disks called 'Disk Cards' which could store 112K, which was a considerable size on its release in 1986. "Based on results, the disk system wasn't a good idea," acknowledges Uemura, "but from a developer's [point of] view, it was rewritable and it did reduce costs." A release in the West was mooted but never materialised.

ZAPPER (BELOW)

■ Originally resembling a revolver when released in Japan to tie-in with the cowboy-themed *Wild Gunman* game, this lightgun was remodelled for the North American market, adopting a futuristic blaster look. Initially produced in NES grey, a version came in fluorescent orange, presumably to distance itself even further from an actual firearm. Many pixelated birds succumbed to its firepower when *Duck Hunt* was bundled with the console.

SUPER FAMICOM

■ What Uemura did next. He was lead designer again on what would become one of the most beloved consoles of all time and home to some of the best games ever made. Uemura politely declined to answer any questions about his follow-up to the NES during our interview, though alluded to many intriguing tales concerning its creation. Perhaps when the SNES also reaches 30 we'll get to hear them.

> "Kids were calling our HQ in Seattle if they were stuck in a game or asking about secrets"
>
> Masayuki Uemura

©1985 Nintendo®
Zapper™
SELECT

» "I would like to have added larger sprites," says Uemura when asked if he'd have done anything different with his console. "Characters were only 8x8 pixels."

TO THE MAX

The games and chips that expanded the NES's capabilities

MEGA MAN 2

CHIP: **MMC1**

■ The first of Nintendo's custom memory management controller chips was used to switch between banks of program and character ROM, and it added support for important things like game saving and multi-directional scrolling. As a result, many games used it – literally hundreds of them, from both Nintendo and its third parties.

SUPER MARIO BROS. 3

CHIP: **MMC3**

■ The most popular of Nintendo's add-on chips was used in many NES games, and provided additional RAM, a pair of selectable 8KB program ROM banks, two 2KB character ROM banks and four 1KB character ROM banks. A scanline-based IRQ counter is also included to improve split-screen scrolling.

FIRE
SPEED
MISSILE
FORCE
027900

COBRA TRIANGLE

CHIP: **AOROM**

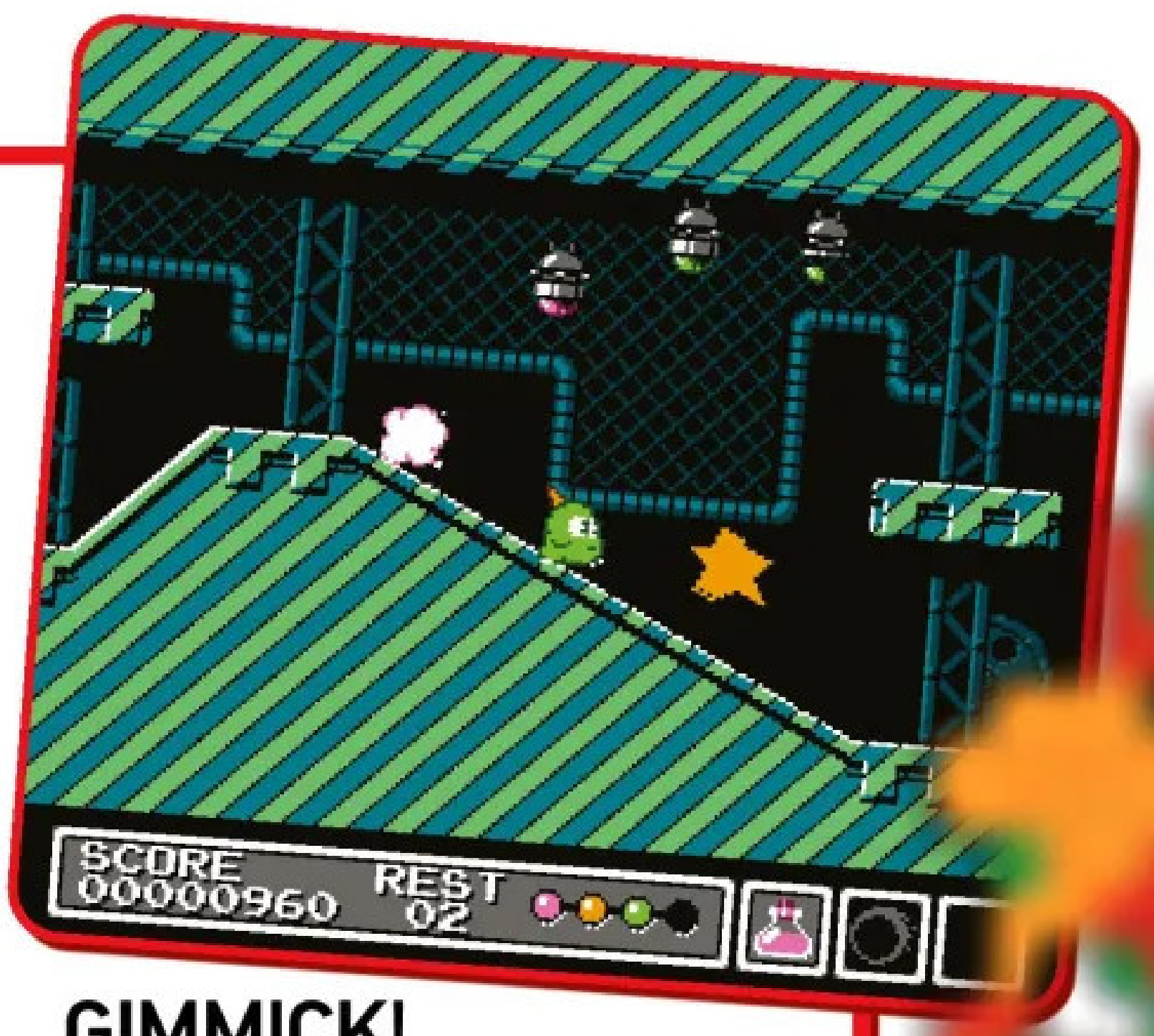
■ Chris Stamper's memory management controller is relatively simple, offering a 32KB ROM bankswitch and character RAM, but it has an odd quirk in that it uses one-screen mirroring, meaning that only one nametable is used for all four quadrants of the screen. As you might expect, it was used in games developed by Rare.

AKUMAJOU DENSETSU

CHIP: **VRC6**

■ As well as offering bank-switching for both program and character ROM and a CPU cycle-based IRQ counter, this advanced chip added three additional sound channels. In the US and Europe, *Castlevania III* used Nintendo's MMC5 chip instead, as the NES can't utilise extra sound channels like the Famicom.

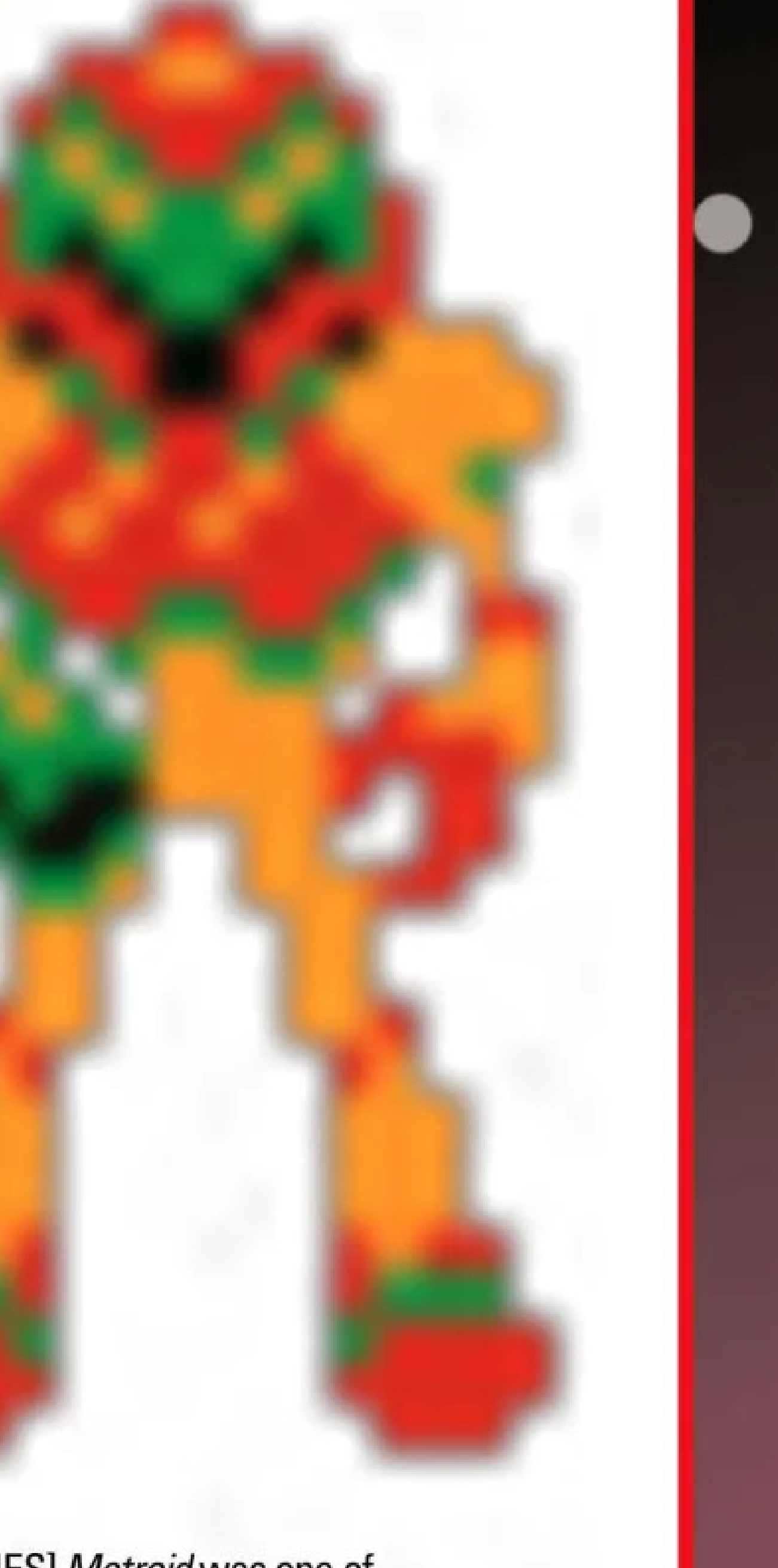
SCORE-001700 TIME 0312 BLK 1-02
PLAYER
ENEMY
P=02



GIMMICK!

CHIP: **SUNSOFT 5B**

■ Sunsoft's FME-7 controller allowed for program ROM to be switched in 8KB banks and character ROM in 1KB banks, and contained a CPU cycle-based IRQ. However, the upgraded Sunsoft 5B version used in *Gimmick!* also included a version of the Yamaha YM2149, adding extra sound channels that set the game apart from its peers.



» [NES] *Metroid* was one of several NES games that featured a Password Pak, after starting off life on the Disk System.

Bros. came out about the same time as it entered America. The rest is history."

New hardware needs a 'killer app', a piece of software that captures the public imagination and makes consumers snap up a machine. *Super Mario Bros.* must rank as one of the best examples of this, becoming the biggest-selling title in videogaming history at the time and igniting America's love affair with all things Mario. There was a real buzz about this new console from the East and Uemura remembers tales of phones ringing off the hook at Nintendo Of America. "Kids were calling our HQ in Seattle if they were stuck in a game or asking about secrets. Our employees couldn't work effectively! We had letters from parents, too. I remember getting some that were really unhappy we hadn't included Stage 2 [the pie factory] in the NES version of *Donkey Kong*. We had to say sorry, it wasn't possible, but it made me realise parents were really evaluating the NES."

So despite the initial predictions from experts that Nintendo was foolhardy releasing a console after the so-called videogames crash of the mid-Eighties, the NES ended up dominating the American and Japanese markets for the rest of the decade, ably filling the gap left by Atari's fall from grace. Was timing a key factor in the colossal success of the console, we ask?

"You understand the meaning of the word 'Nintendo'?", Uemura replies. "Leave luck to heaven," we answer. He looks us right in the eyes and chuckles, "Well, there you are."

As our time with Uemura draws to an end, an orderly queue forms of National Videogame Arcade staff politely asking if he might autograph various bits of NES hardware. We dutifully join the line along with our photographer Matt, who clutches a boxed console in mint condition. Neither of us owned the machine back in the day but, as with so many Europeans, we have come to love it in retrospect. As Uemura gets busy with a magic marker, we ask him how important it was to him that his console was embraced not just in his native Japan but across the globe?

"From a management perspective, of course we want to sell to everybody in the world," he says, after a long pause, "but it's not about that from an engineer's perspective. It's about whether the hardware they produce will be loved and esteemed by everyone. That's what we struggle to do. Personally, I thought it was great hardware but I didn't think it would be accepted [in the way it was]. And remember, the people that made the games did not grow up playing videogames. Creating something in their minds and interacting with it on a TV screen was really exciting for them. That excitement was passed on from the developer to the player at home. Hardware can allow you to go beyond your imagination. Like [James] Watt invented the steam engine and it set other people's imagination free…"

It's a powerful point and Uemura's answer gives us the required confidence to ask him one final question. What role does he think videogames have played in fostering an understanding and collaboration between the nations of East and West? A gentle smile spreads across Uemura's face.

"Childhood is universal," he says. "We are different cultures but we share that universal sense of childhood. To children, it didn't matter if this software was coming from the East or the West. Kids loved Mario and parents loved [the NES] because their kids loved it. Children will be excited by similar things despite cultural diversity. I'm teaching at the university in Kyoto right now and [the word] 'jump' is used in Japan, taken straight from English. Kids, anywhere in the world, want to jump! We could integrate that into videogames. It's about play. The NES also had an important role in transmitting Japanese culture to the world and we received influences from the rest of the world. If America hadn't invented consoles, we wouldn't have the NES!"

The Nintendo Entertainment System as a symbol of peace and understanding may be pushing it slightly but it undoubtedly makes us look at the unassuming grey breeze block in a different light. As we shake hands with Uemura and Aki and say our goodbyes, fellow journalist Gemma asks its creator what the console symbolises to him?

"It's the device that changed my life," he laughs. "It made it go crazy! After all these years, I'm still talking about it, coming here, all over the world."

Over thirty years after its UK release and the NES is still bringing people together. *

Nintendo
START
B
A

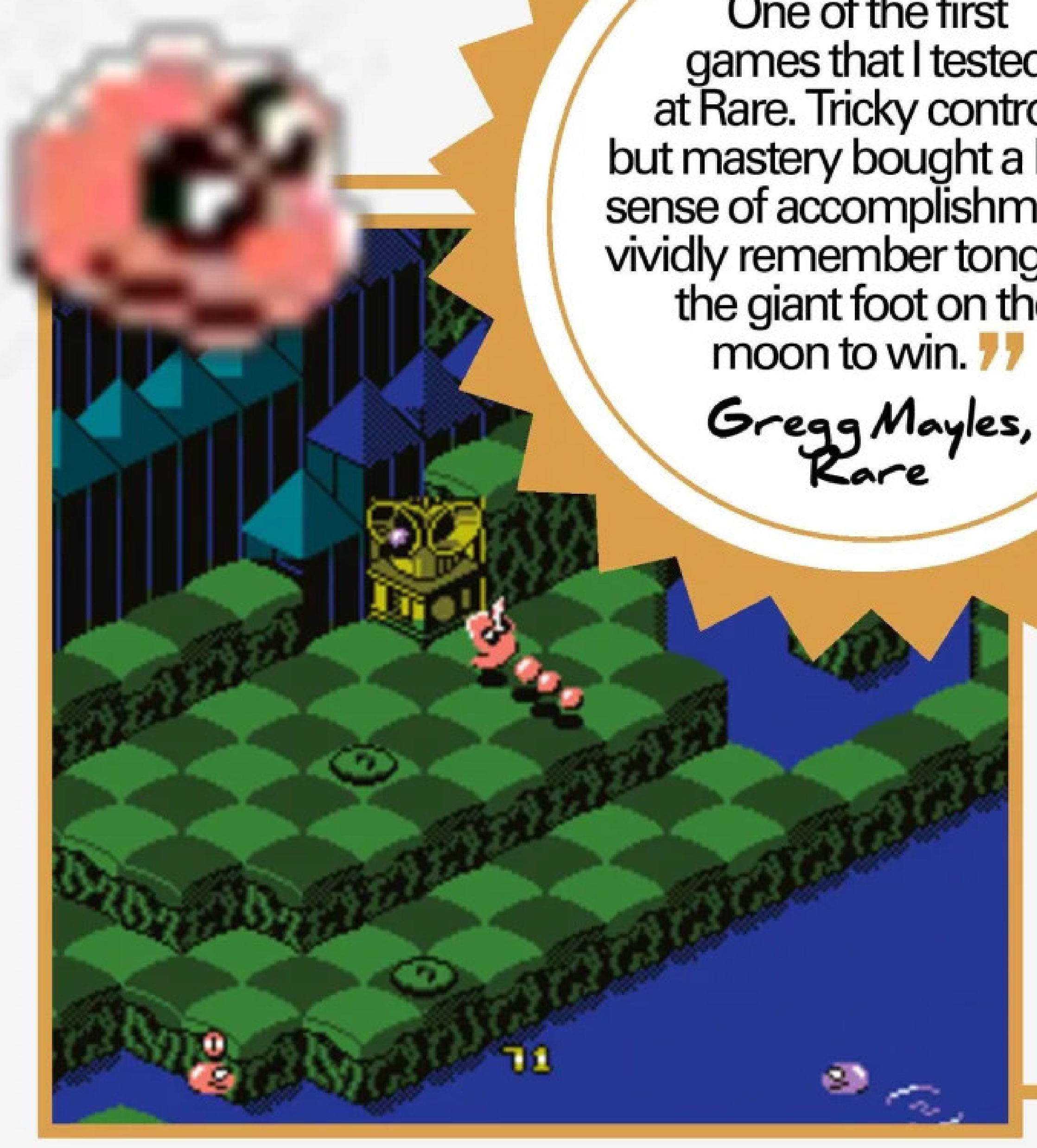
» Before the Wii, the NES was Nintendo's most successful system, with over 60 million units sold.

Many thanks to the National Videogame Arcade, Uemura's translator, Aki, Gemma at juicygamereviews.com and Matt Taylor at bit.ly/1SVZX3t for the photography.

THE GREATEST NES GAMES

Nintendo's 8-bit machine established the company as the dominant force in the international console market, and it couldn't have done so without classic software. Nick Thorpe counts down its top 25 games, as voted for by Retro Gamer readers…

Nintendo®
SELECT
START



> “One of the first games that I tested at Rare. Tricky controls but mastery bought a huge sense of accomplishment. I vividly remember tonguing the giant foot on the moon to win.”
>
> Gregg Mayles, Rare

SNAKE RATTLE ‘N’ ROLL

DEVELOPER: Rare **YEAR:** 1990 **GENRE:** Platform

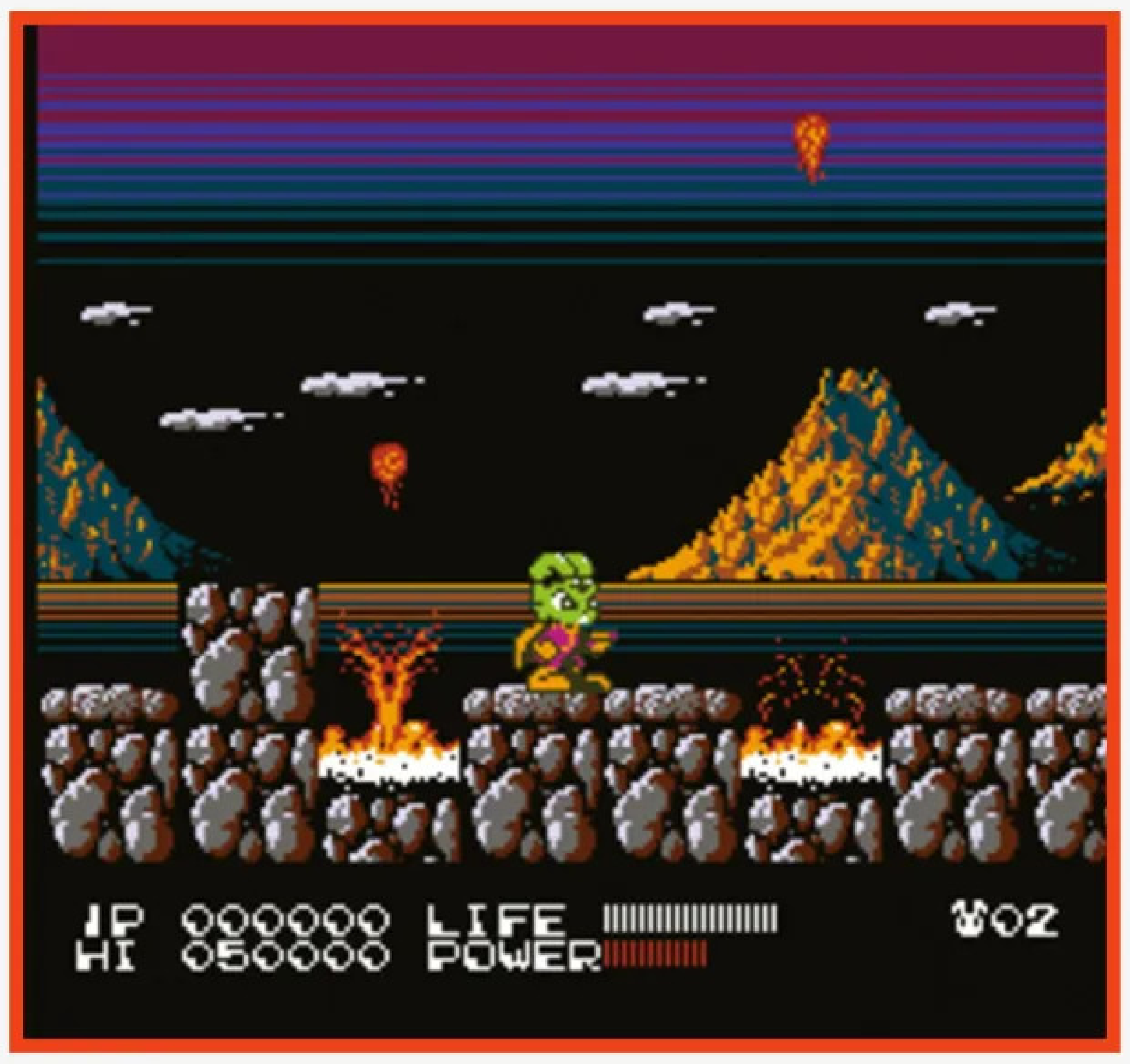
25 **Born from an** experimental drive to create a small NES cartridge, *Snake Rattle ‘N’ Roll* sees players chasing down and eating Nibbley Pibbleys in order to grow their snake, in order to tip the level’s scales and open the door to the next stage. Rare’s isometric action game is a tricky one to categorise – but that’s not a bad thing, as it’s a unique experience. Be sure to try the simultaneous two-player mode, too!

BUCKY O’HARE

DEVELOPER: Konami

YEAR: 1992 **GENRE:** Platform

24 **The spotlight might** not have shone on *Bucky O’Hare* for long, but Konami ensured that he got a very good licensed platform game while it did. It’s similar to *Mega Man* in structure, with Bucky seeking to rescue his crew members from the Toad Empire across a variety of planets, which can be tackled in any order. Arriving late in the life of the NES, *Bucky O’Hare* provided some of the most attractive visuals on the system alongside some pretty strong gameplay.

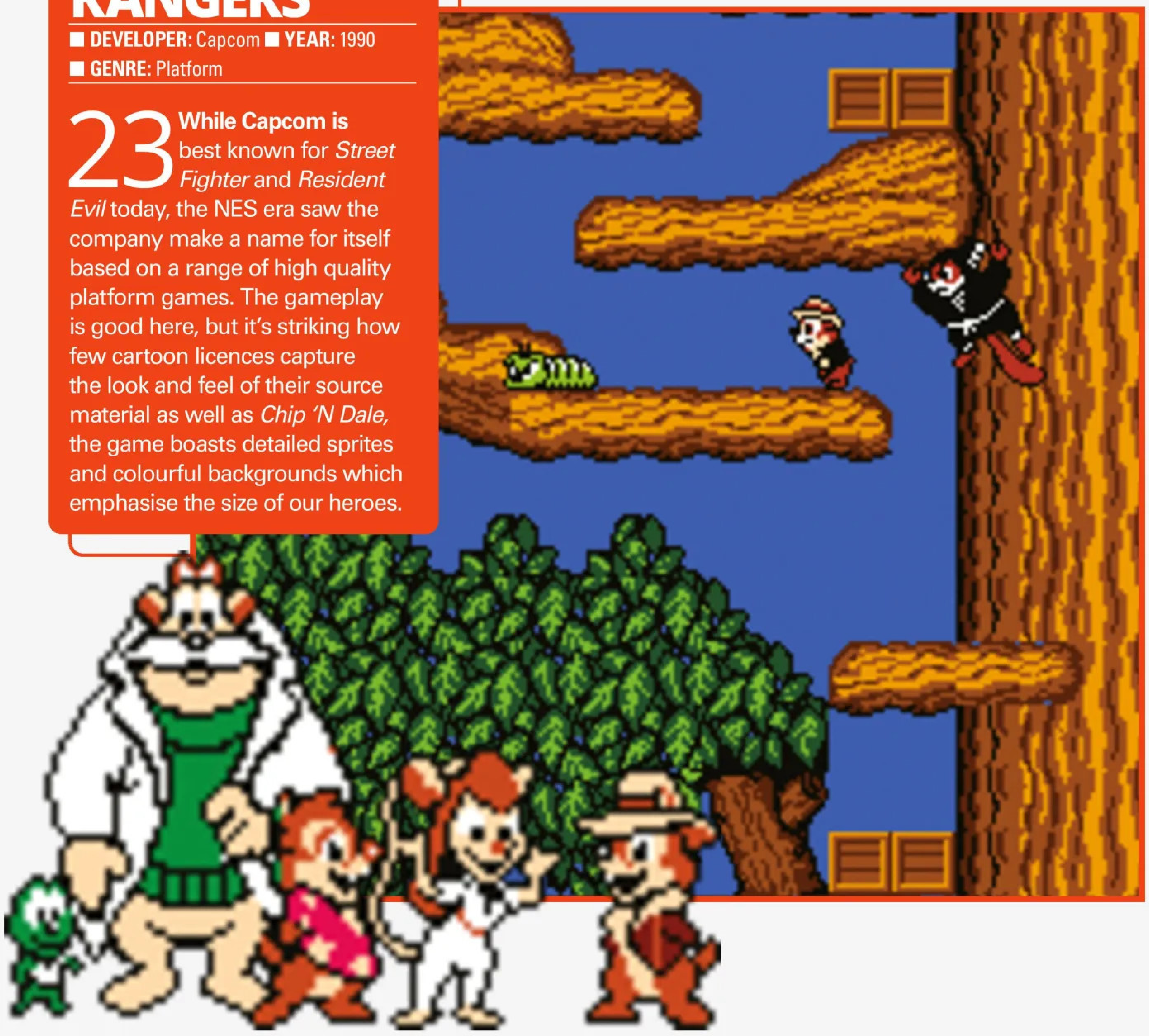


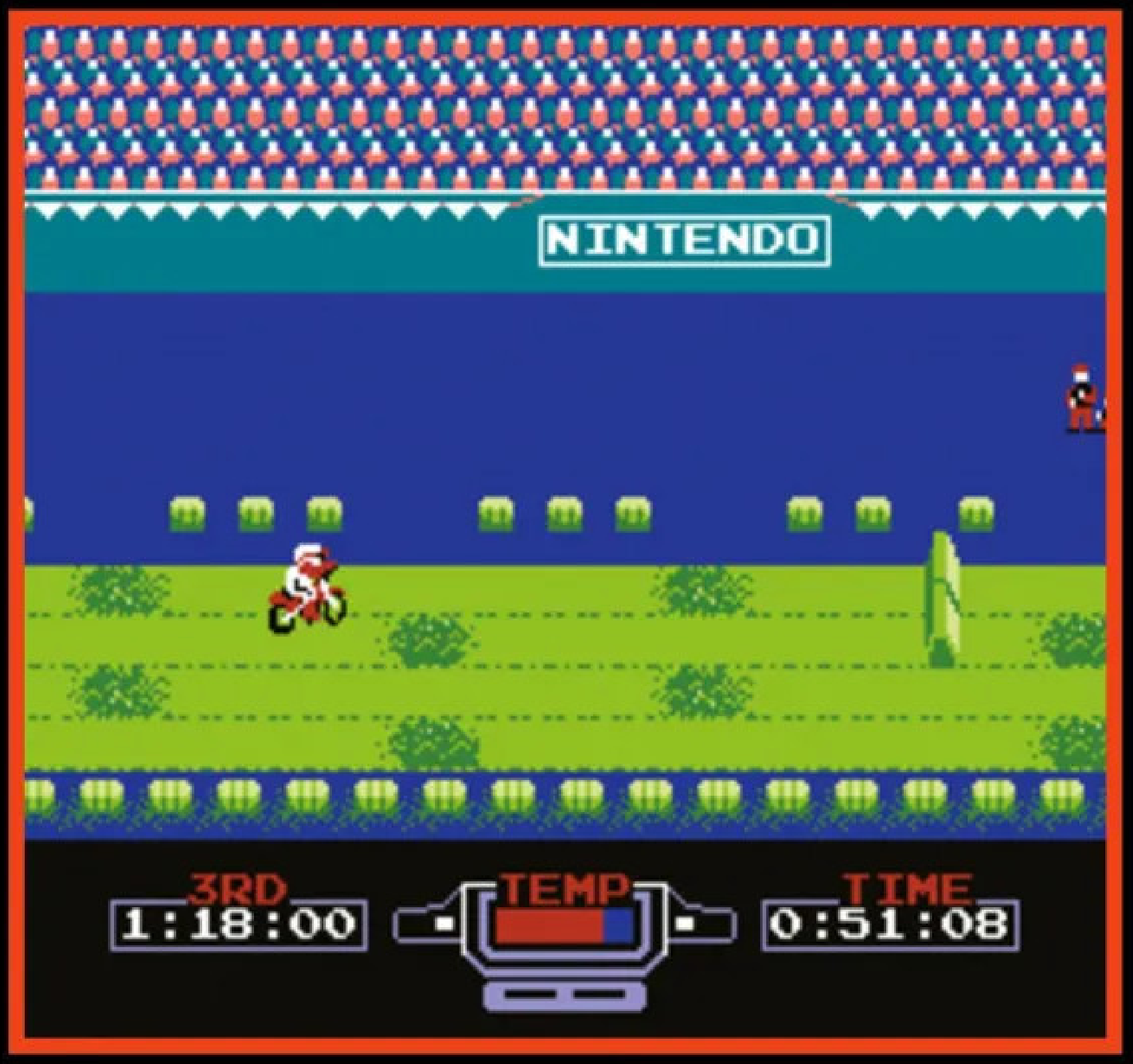
CHIP ‘N DALE: RESCUE RANGERS

DEVELOPER: Capcom **YEAR:** 1990

GENRE: Platform

23 **While Capcom is** best known for *Street Fighter* and *Resident Evil* today, the NES era saw the company make a name for itself based on a range of high quality platform games. The gameplay is good here, but it’s striking how few cartoon licences capture the look and feel of their source material as well as *Chip ‘N Dale*, the game boasts detailed sprites and colourful backgrounds which emphasise the size of our heroes.





EXCITEBIKE

DEVELOPER: Nintendo R&D1

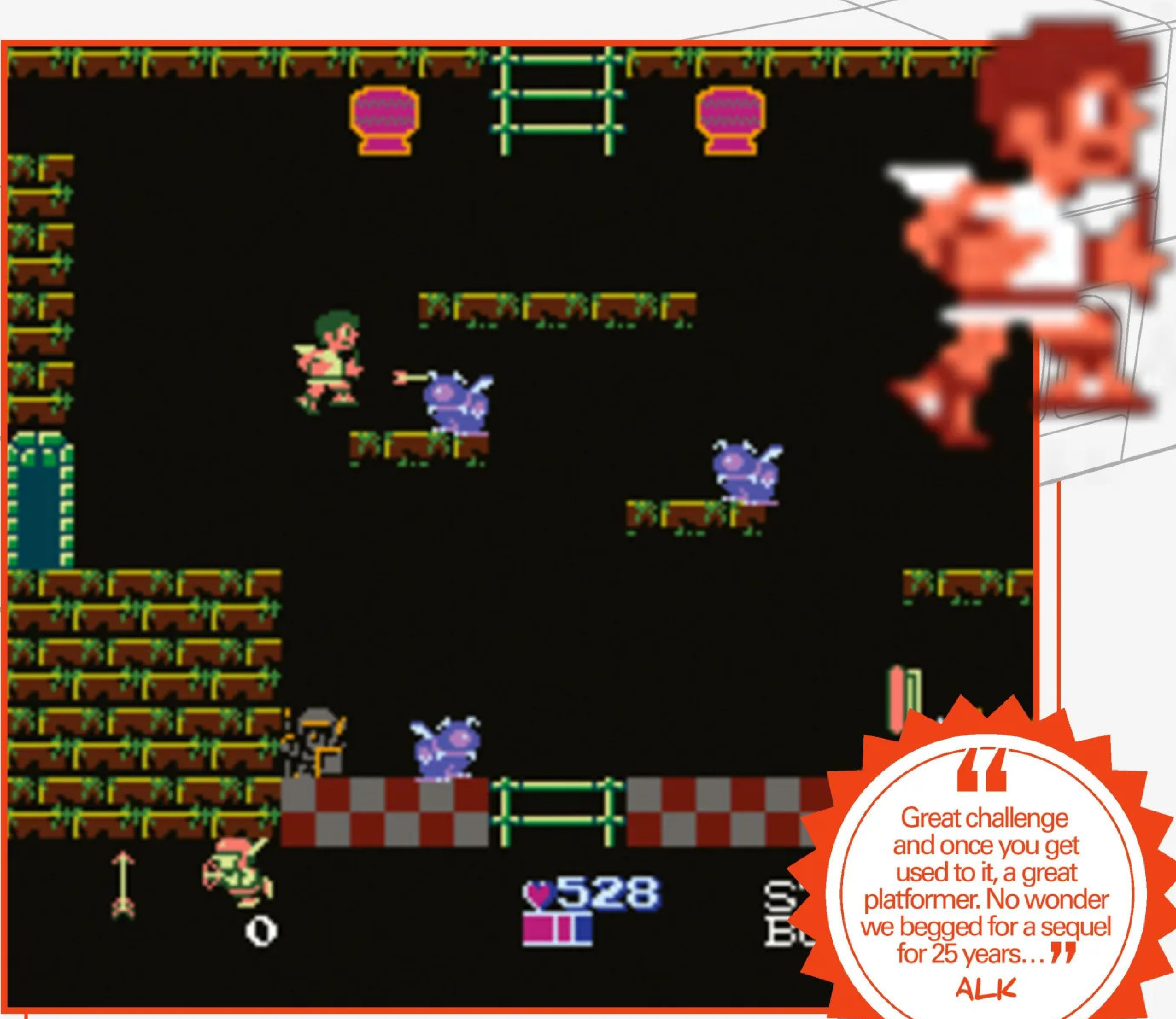
YEAR: 1984 **GENRE:** Racing

22 **One of the** interesting things about the NES is that the machine had a very long shelf life, with over a decade between its Japanese release as the Famicom and the final officially licensed games in the mid-Nineties. With so much time for developers to extract the best performance from the machine and all of the additional chips utilised over the years, it’s easy to expect that the console’s early releases would be overshadowed by the more complex games – but that’s not the case, as games like *Excitebike* show.

Excitebike is a simple game. Either alone or with computer controlled riders, your goal is to beat target times on each course in order to progress. This is complicated by obstacles including grass, mud patches, barriers, and the ever-present ramps, which require players to correct their landing angle as they fall – a simple challenge, but one which remains challenging to consistently perform over a long period. Falling off your bike will cost you valuable time, as will overheating the bike by overusing the high speed button. As the game goes on, the courses become more complex, with high angle ramps and fewer clear stretches on the track.

> “Typical Nintendo, simple as anything, but hard to master, and it is so much fun.”
>
> adippm82

The main thing that set *Excitebike* apart from other NES games was the inclusion of a level editor. While the option to save and load these creations was never available to the West as it required the Japan-only Famicom Data Recorder add-on, the mode extended the game’s life considerably once they’d exhausted all of the pre-designed stages. While *Excitebike* might not have been the flashiest game in many players’ NES collections, the combination of this mode and the compelling gameplay meant that it was often revisited.



> “Great challenge and once you get used to it, a great platformer. No wonder we begged for a sequel for 25 years…”
> ALK

KID ICARUS

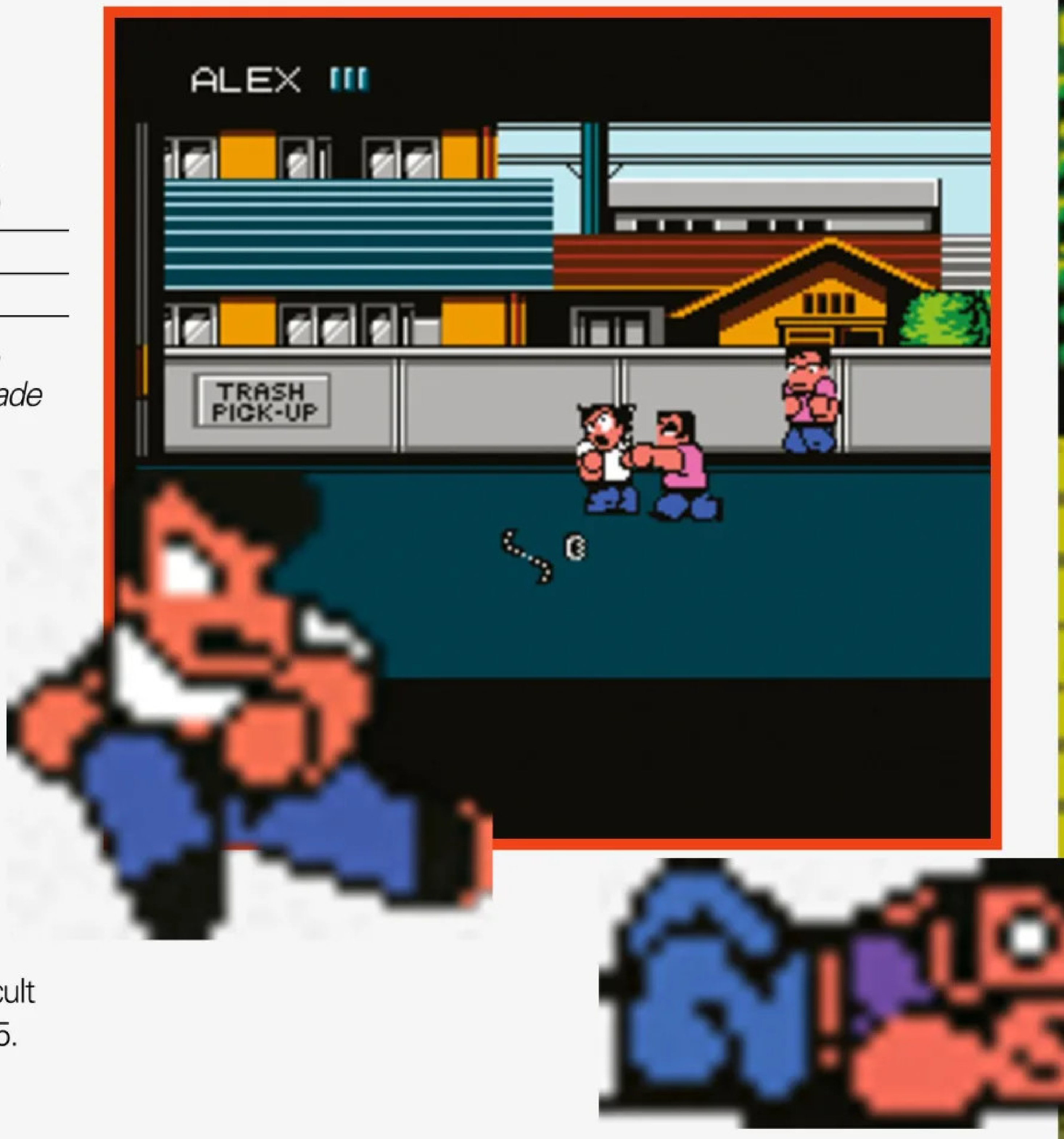
■ **DEVELOPER:** Nintendo R&D1 ■ **YEAR:** 1986 ■ **GENRE:** Platform

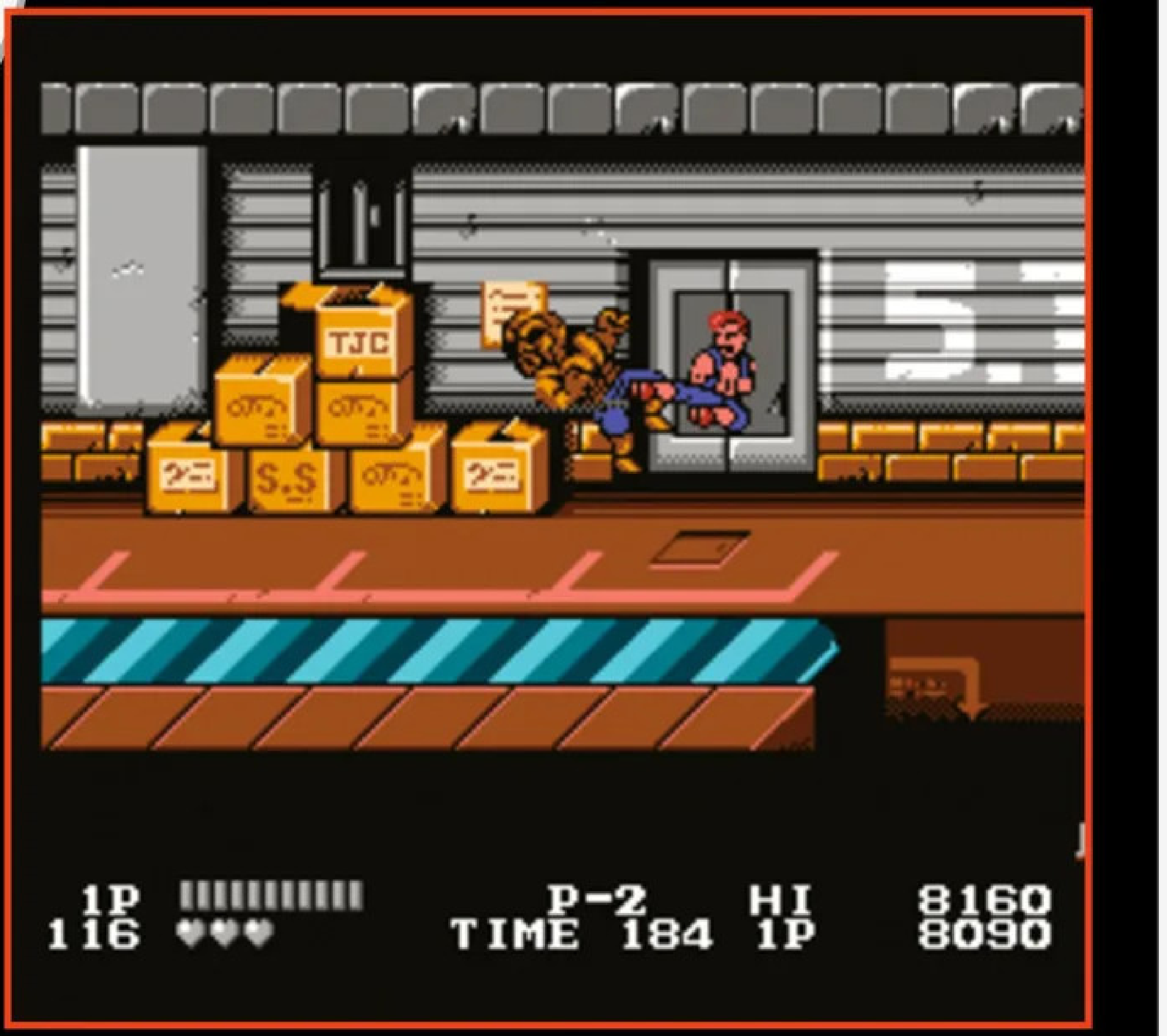
21 **Right from the** start, *Kid Icarus* is a game that just *feels* different from its platforming contemporaries. In other games you'll typically traverse a stage from left to right, but *Kid Icarus* starts you off by sending you on a skyward journey, with a playfield that wraps horizontally across the screen – when Pit walks off the right edge, he'll appear on the left. It's a feeling of difference that permeates the game, as while the game offers items and upgrades, it never crosses over into RPG territory. For many years this was one of Nintendo's forgotten properties, with only a Game Boy sequel to continue its lineage, until Pit's adventures were continued in the shooter *Kid Icarus: Uprising* on the Nintendo 3DS.

RIVER CITY RANSOM / STREET GANGS

■ **DEVELOPER:** Technos
■ **YEAR:** 1989 ■ **GENRE:** Beat-'em-up

20 **Following arcade success** with games such as *Renegade* and *Double Dragon*, beat-'em-up innovators Technos returned with a NES title that took the genre in a more console-focused direction. As well as beating up all manner of weirdly-named gangs like The Squids and The Generic Dudes, players can learn moves, develop stats, and even buy items. *River City Ransom* wasn't a huge success when it arrived in North America and it didn't fare a great deal better when it was released in Europe as *Street Gangs*, but the game's reputation has grown, thanks to a loyal cult following, earning its place in your top 25.

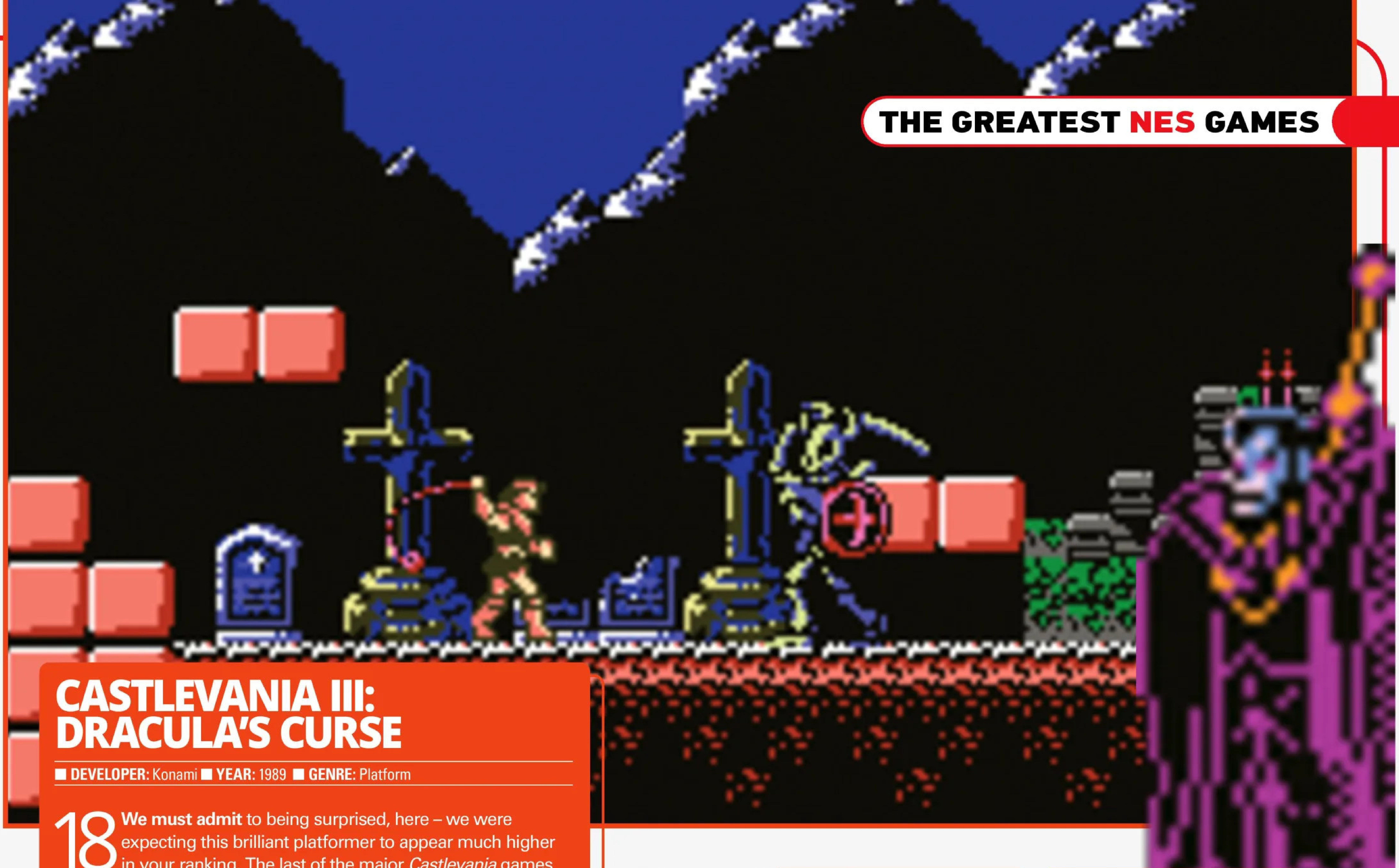




DOUBLE DRAGON

■ **DEVELOPER:** Technos ■ **YEAR:** 1988 ■ **GENRE:** Beat-'em-up

19 **The hit beat-'em-up** came to the NES, but rescuing Marian from the clutches of Machine Gun Willy wasn't quite the same proposition as in the arcades. For a start, the simultaneous two-player mode is nowhere to be found, and enemy numbers are limited. Further, stages received some interesting redesigns and all but the most basic fighting moves were gained through an experience system. Despite these changes, *Double Dragon* remained a compelling and challenging beat-'em-up that retained enough of the arcade essence to be truly worthy of the name. Multiplayer fans can also check out Mode B, which features larger character sprites in one-on-one battles and it even allows players to control enemy characters – an interesting novelty, to say the least.



CASTLEVANIA III: DRACULA'S CURSE

DEVELOPER: Konami **YEAR:** 1989 **GENRE:** Platform

18 **We must admit** to being surprised, here – we were expecting this brilliant platformer to appear much higher in your ranking. The last of the major *Castlevania* games to appear on the NES was a prequel to the events of the first game, starring Simon Belmont's ancestor, Trevor Belmont, as he attempted to defeat Europe's most notorious vampire.

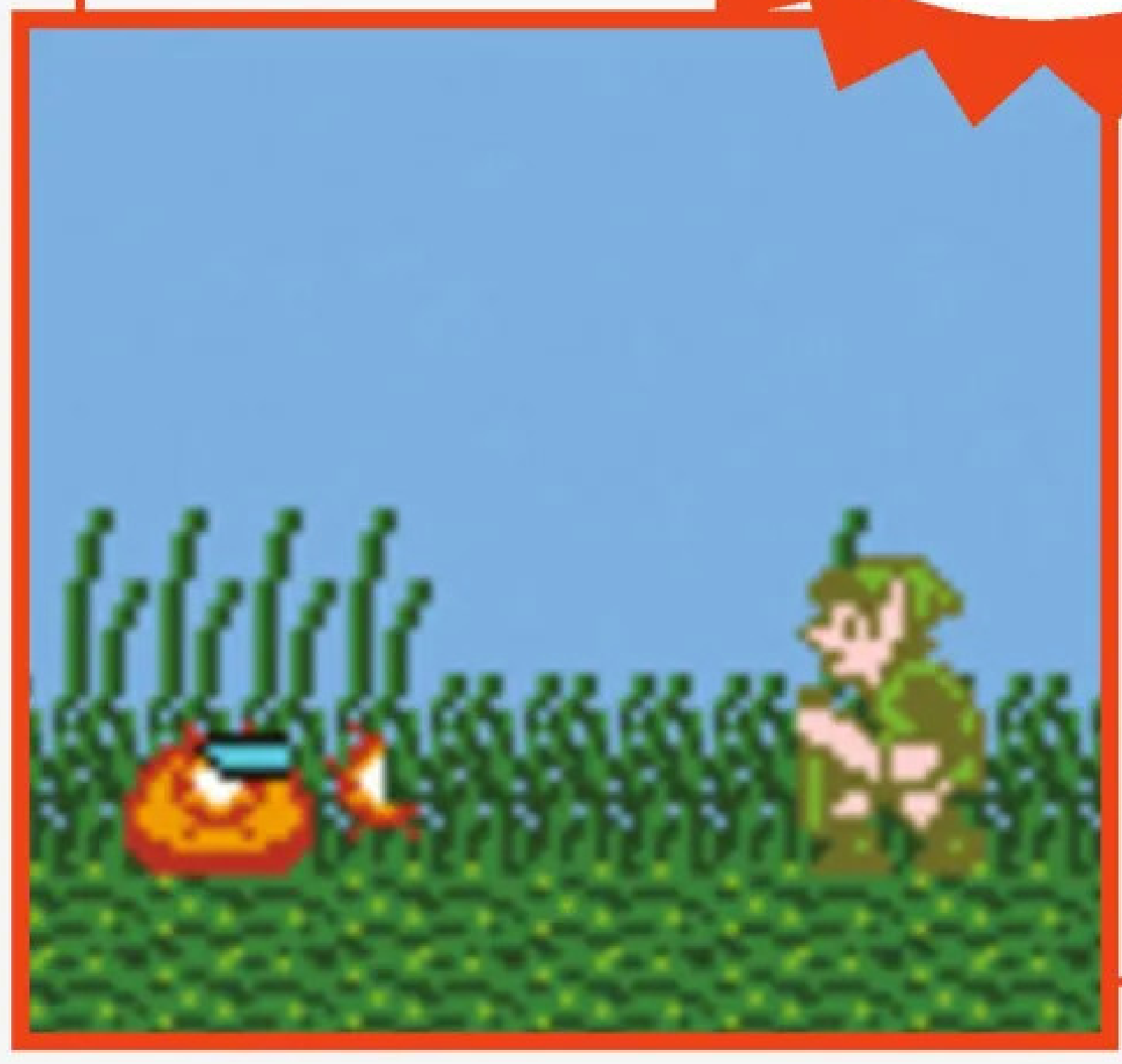
The game left the RPG elements of *Castlevania II: Simon's Quest* and returned to the platform action template of the original game. However, new improvements included a non-linear level structure, additional playable characters with their own unique abilities (including *Symphony Of The Night* star, Alucard) and a more challenging second quest for players that have finished the game. In part thanks to the use of the expensive MMC5 chip, *Castlevania III* boasts some of the most impressive visuals on the system, and the action is accompanied by an excellent soundtrack.

ZELDA II: THE ADVENTURE OF LINK

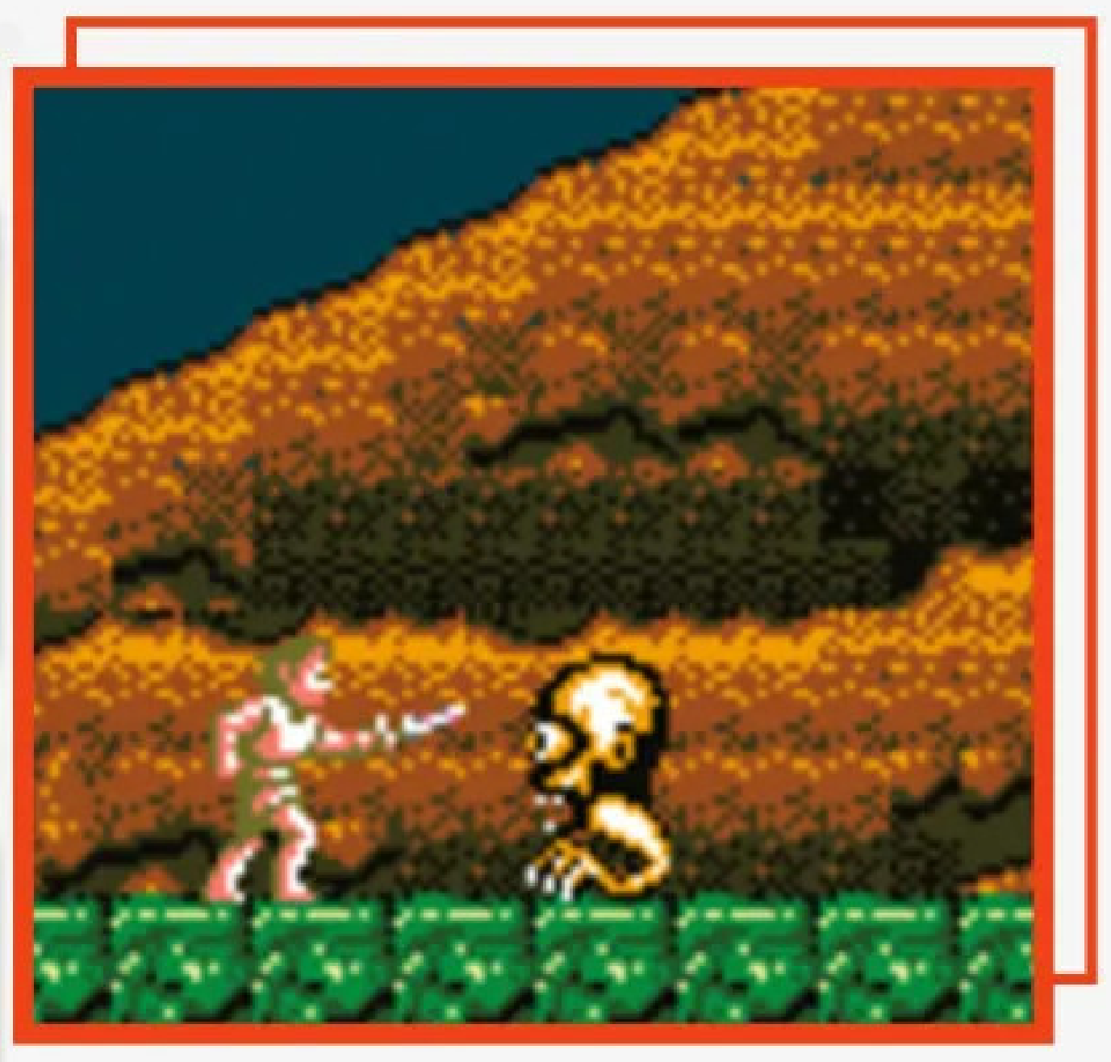
DEVELOPER: Nintendo R&D4 **YEAR:** 1987 **GENRE:** Action-RPG

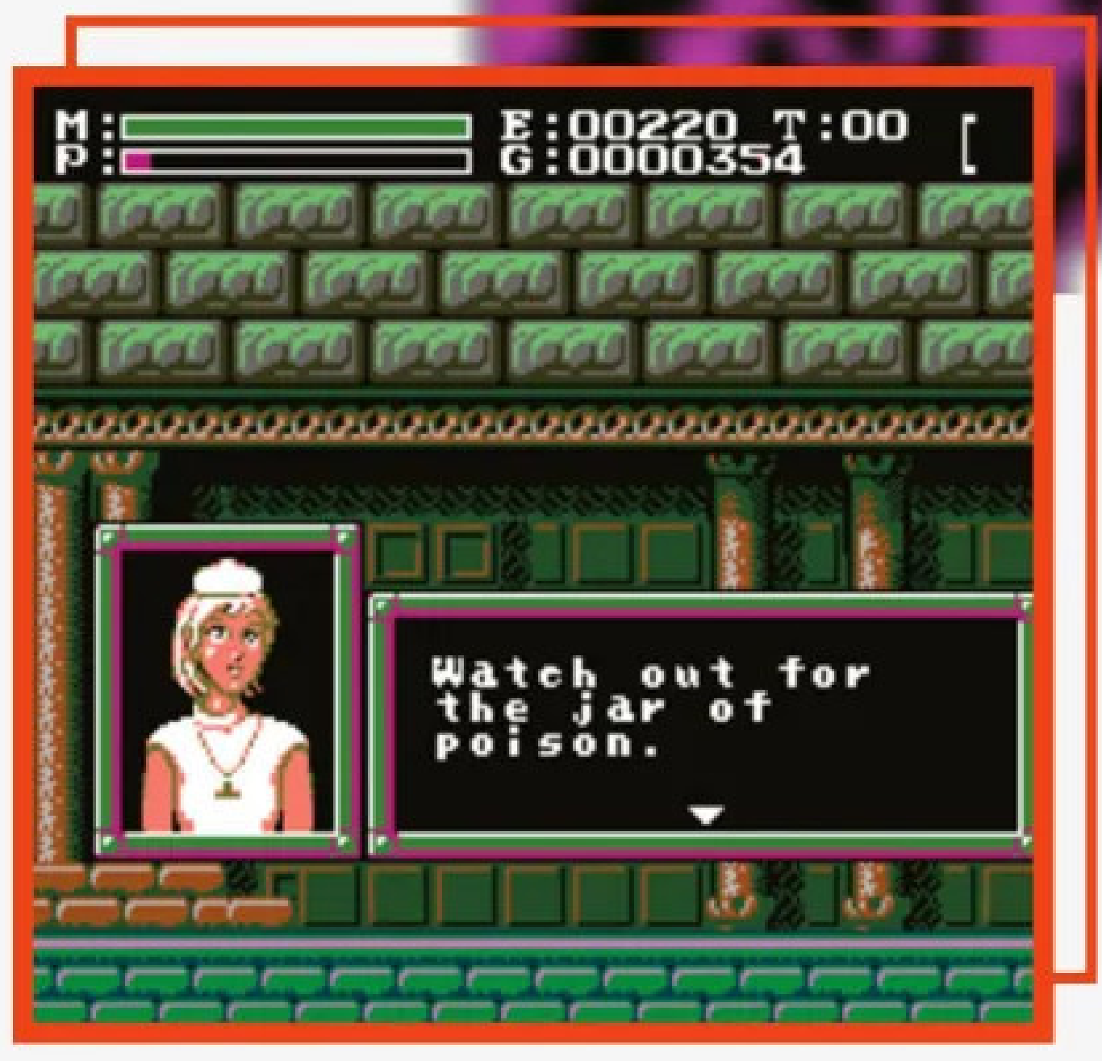
17 **Despite huge sales** of over 4 million copies, the first *Zelda* sequel hasn't always received a huge amount of love over the years. However, lots of you hold the opinion that it is unfairly maligned and we're inclined to agree. *Link's Adventure* retained the first game's top-down viewpoint for overworld exploration, but the meat of the gameplay was found in side-scrolling combat sections. Additional RPG elements were also introduced in *Zelda II*, including experience levels, a magic system and more extensive interaction with the non-player characters you found in towns.

Players have come down hard on *Zelda II* for departing so heavily from the gameplay of the original title, and future 2D *Zelda* games stuck much more closely to the top-down action of the first game. However, it highlights Nintendo's willingness to experiment as a game developer – a commendable quality, even if it doesn't always guarantee popular results.



> "I know people think it's the black sheep of the *Zelda* series, but it should be given a chance 'cos it's a great game."
>
> SpockIOM





M:
P:
E:00220 T:00
G:0000354

Watch out for the jar of poison.

FAXANADU

DEVELOPER: Hudson Soft **YEAR:** 1987 **GENRE:** Action-RPG

16 **We hear your** cries, dear readers! *Faxanadu* is a game that you've highlighted as being something of a forgotten gem, and its appearance in the top 25 is testament to your strength of feeling on this matter. The player is cast as a wanderer who returns to his home town only to find it in a state of severe decline, and being attacked by dwarves. The high fantasy setting is aided by the fact that *Faxanadu* doesn't utilise the cartoonish look that many NES games adopted, giving it a more mature impression.

The game itself is a side-scrolling action-RPG of the kind that will be familiar to players of games such as *Zelda II* and *Wonder Boy III: The Dragon's Trap*. *Faxanadu* includes many of the key trappings of the RPG genre, with a protagonist whose capabilities grow with experience, a wide range of non-player characters to chat to, and full inventory options, but combat and exploration are handled in a traditional platform game fashion. Give it a go if you haven't yet played it – with prices hovering around £10, it won't break the bank and you wont regret it.

DUCKTALES

DEVELOPER: Capcom

YEAR: 1989 **GENRE:** Platform

15 **Capcom offered an** excellent choice of licensed Disney platformers on the NES, and you guys liked *DuckTales* the most. We love Scrooge McDuck hopping around on his cane, and the structure which requires you to obtain items in various stages to progress is very cool.

KIRBY'S ADVENTURE

DEVELOPER: HAL Laboratory

YEAR: 1993 **GENRE:** Platform

14 **Players that kept** their NES hardware deep into the 16-bit era were rewarded with this incredible platformer. It wasn't the hardest game to complete, but the ability to copy enemy attacks offered a twist on the platform genre which ensured that we remained interested throughout.

SUPER MARIO BROS. 2

DEVELOPER: Nintendo R&D4

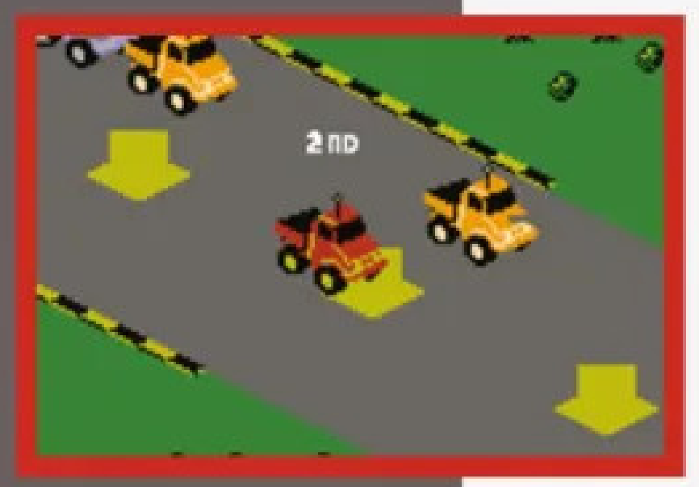
YEAR: 1988 **GENRE:** Platform

13 **While this** ***Mario*** **game** wasn't always a *Mario* game and feels slightly different as a result of that, the fact remains that it's still an excellently designed platformer. Being able to control Peach and Toad was very cool, and Luigi became distinct from his brother with his floaty jumps.

RC PRO-AM

DEVELOPER: Rare

YEAR: 1987 **GENRE:** Racing



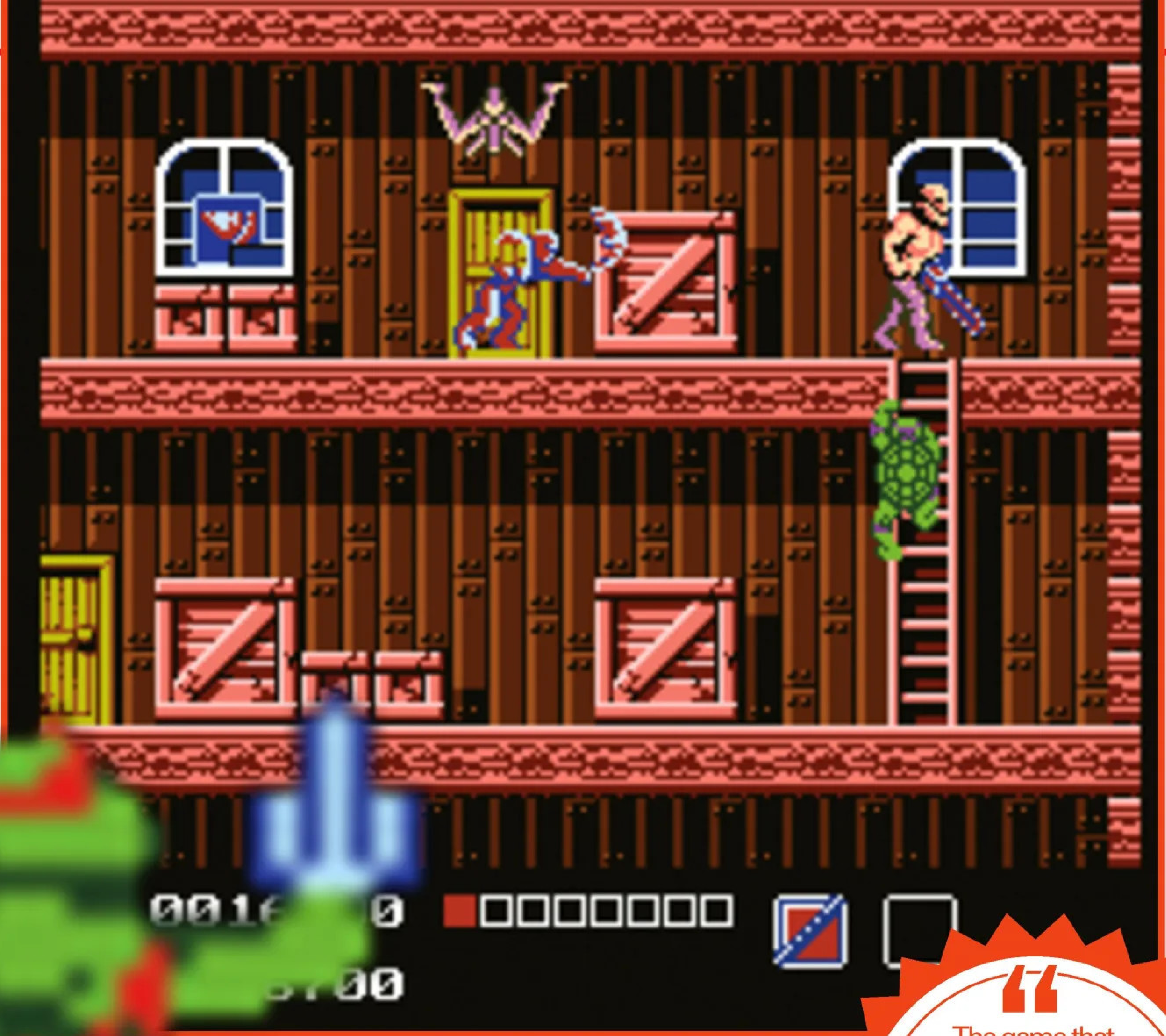
12 **This racer** is one of Rare's earliest hits on a Nintendo platform, and features radio-controlled cars battling to take victory across 24 tracks. We mean it when we say battling, too – these little cars pack some firepower, with bombs and missiles available to take out rivals.

MIKE TYSON'S PUNCH-OUT!!

DEVELOPER: Nintendo R&D3

YEAR: 1987 **GENRE:** Fighting

11 **Taking the action** of Nintendo's arcade boxing series and taking it to the home consoles, *Punch-Out!!* knocked players out with memorable characters and compelling mechanics. Best of all, Tyson himself put in an appearance.



TEENAGE MUTANT NINJA TURTLES

DEVELOPER: Konami **YEAR:** 1989 **GENRE:** Platform

10 **If there was** one thing that kids couldn't get enough of in the late Eighties and early Nineties, it was this quartet of pizza-loving crime fighters, and Konami sensibly snapped up the videogame rights early. The result was a brilliant, strong platformer, although one which had the incredible ability to frustrate players – in particular, the infamous underwater bomb disarming stage is one of the most frustrating levels in any videogame ever.

While the game was popular internationally, UK-based Nintendo fans have a particular fondness for the game as its placement in a NES bundle over Christmas 1990 meant that it was the first game many players owned. The presence of the Turtles drove up desire for the NES, and even helped it briefly overtake Master System sales in the UK.

> "The game that made me want a NES. I remember recording the ad for the Turtles box set and watching it every day."
>
> RodimusPrime

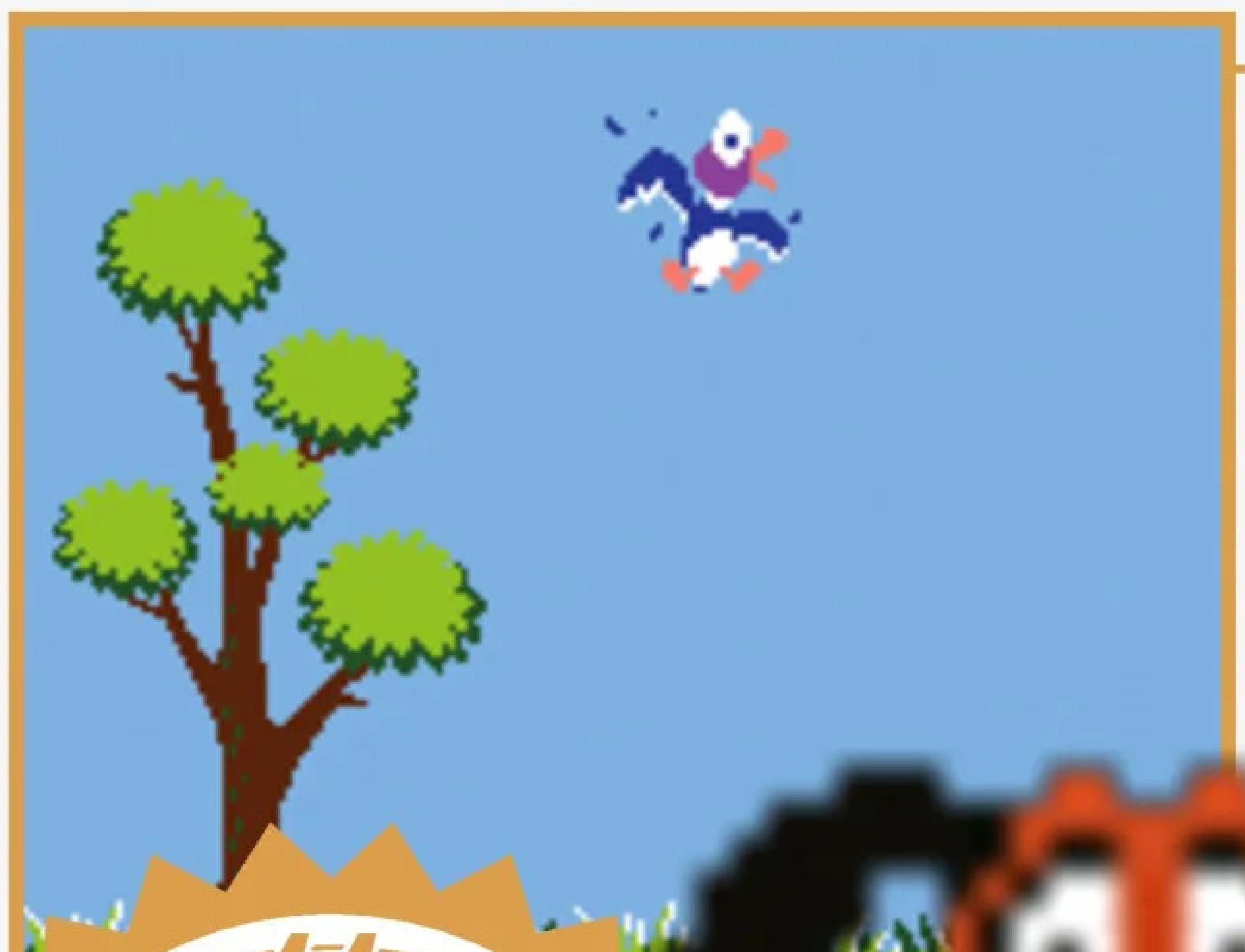
DUCK HUNT

DEVELOPER: Nintendo R&D1

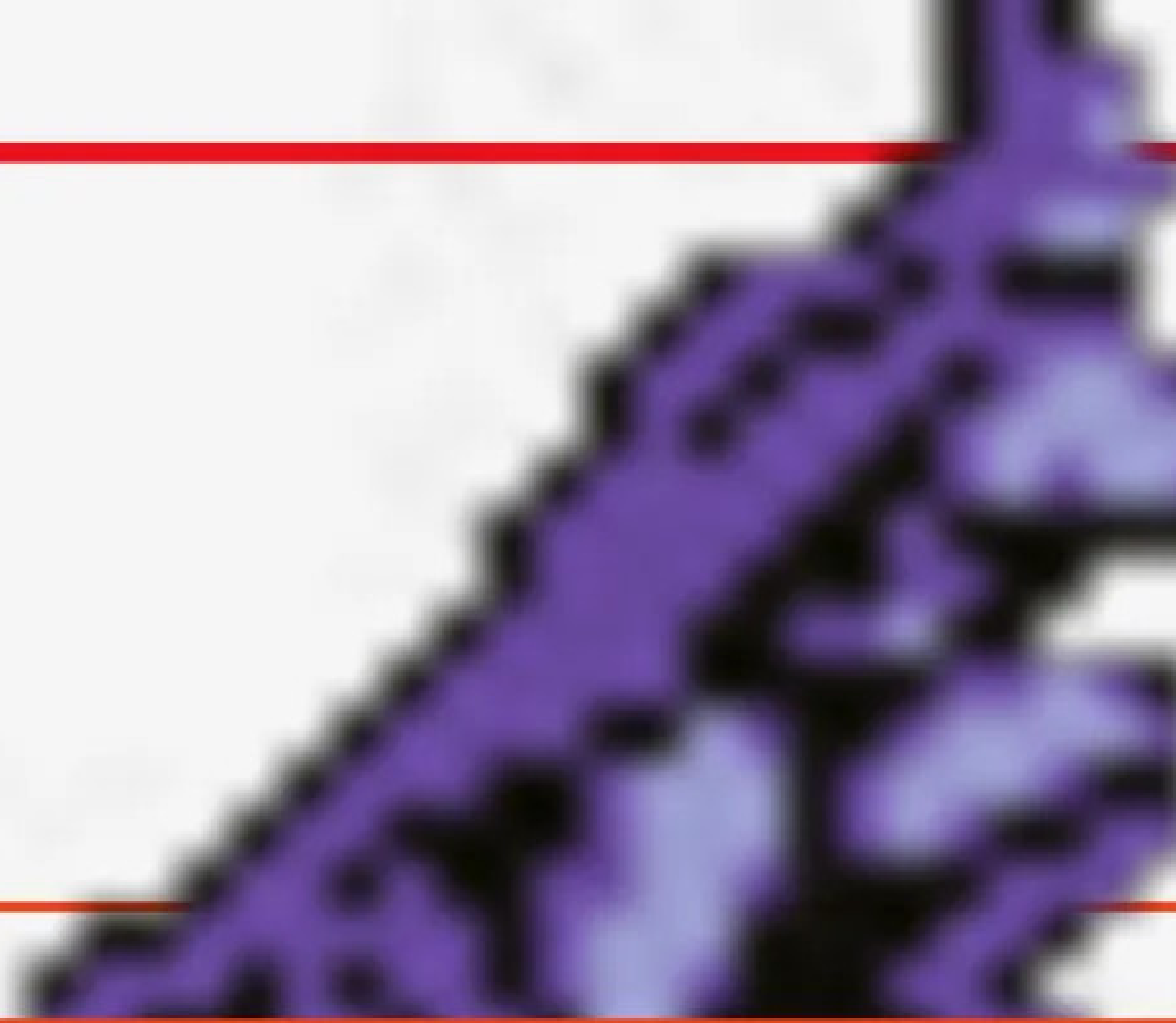
YEAR: 1984 **GENRE:** Lightgun Shoot-'em-up

9 **Packed in with** all but the basic NES console bundles, *Duck Hunt* was a cornerstone of many gamers' NES experiences and was the only Zapper title to make your top 25 list. What makes *Duck Hunt* so memorable is its simple yet captivating gameplay – one or two ducks fly out and you need to shoot them down, ideally with as few misses as possible. There's also the clay pigeon game in Mode C, in which discs fly into the distance.

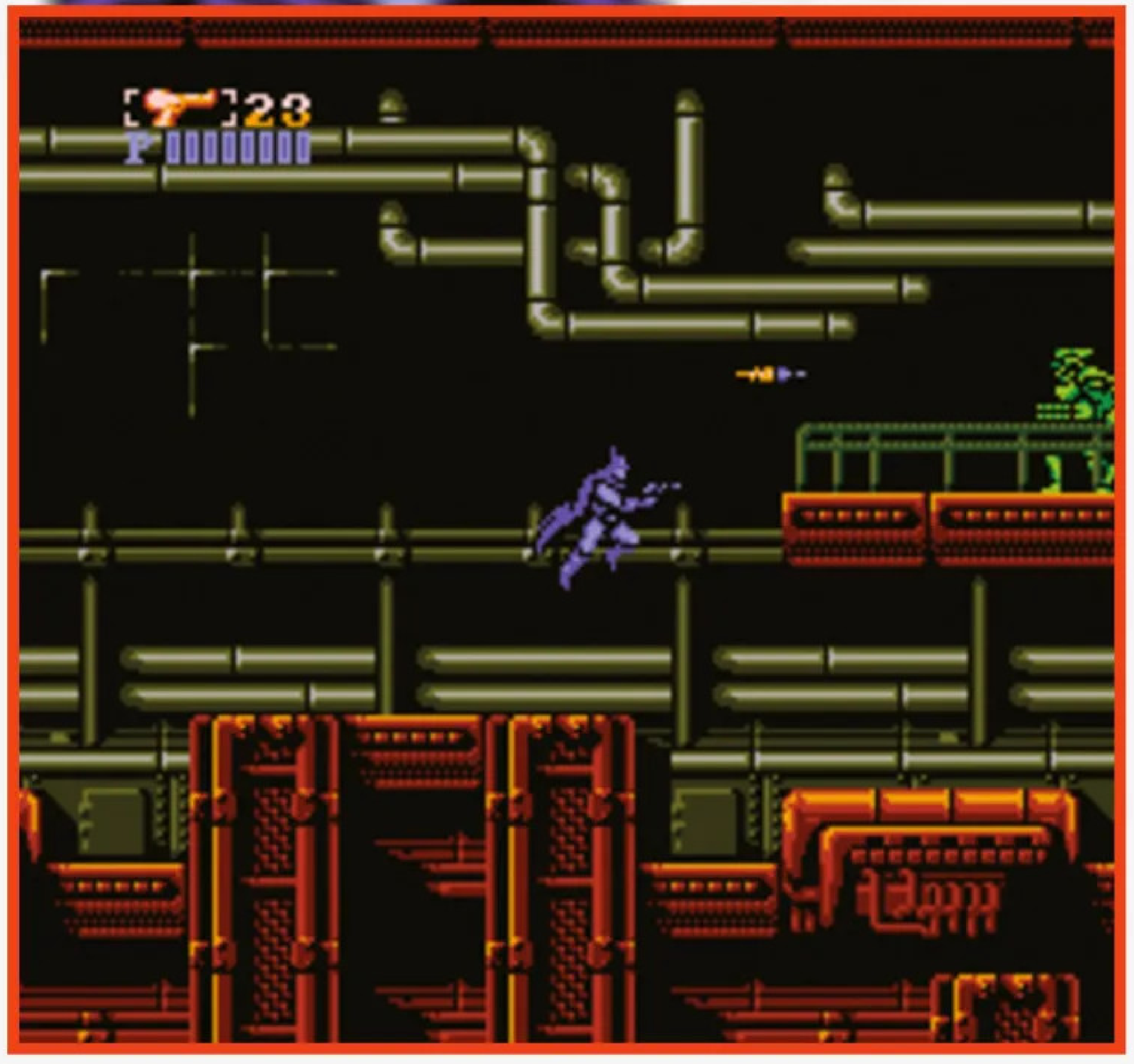
But let's be honest, it's all about bagging birds – and of course that pesky dog. He certainly adds character, proudly displaying your hits when you make them and mocking you when you fail to do so. Our canine companion's sniggering definitely triggers some of our more violent urges, but try as we might, we can never take out our frustrations on him by just blasting him away. That is true sadness, there.



> "This is a great little game, introducing many a fresh keen-eyed marksman to the joys of the lightgun."
>
> Jim Bagley, SpecialFX



Nintendo
ENTERTAINMENT SYSTEM
NES VERSION
POWER
RESET

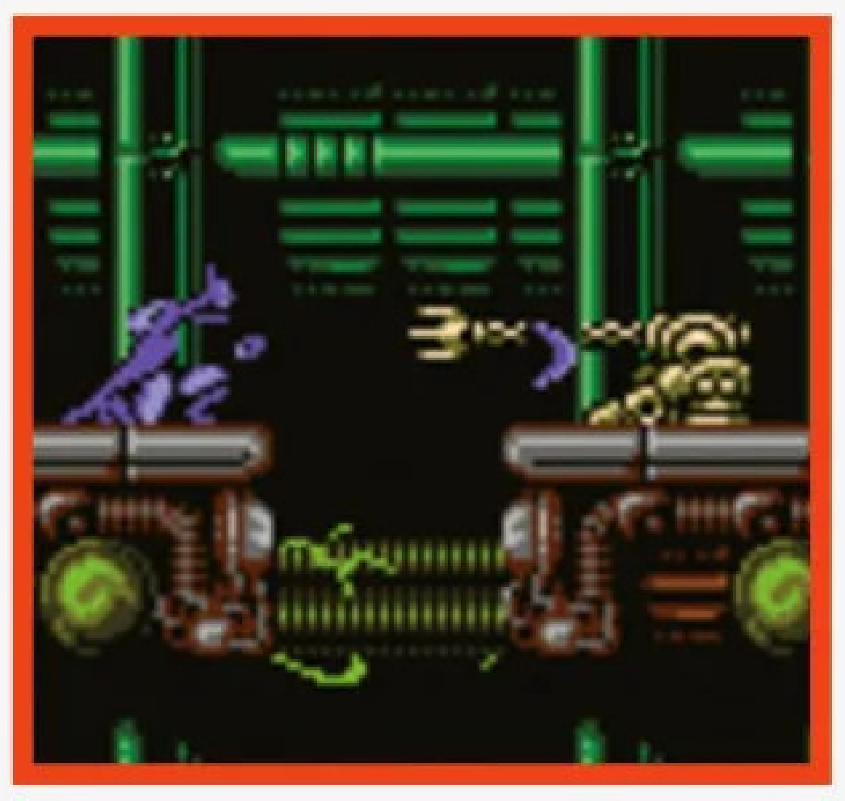


BATMAN

DEVELOPER: Sunsoft **YEAR:** 1989 **GENRE:** Platform

8 **The caped crusader** has had a number of videogame incarnations over the years, but few have accompanied a peak interest in Batman like this one, which followed in the wake of the 1989 film starring Michael Keaton. The videogame was themed after the film and took the form of a platformer which allowed you to fight the likes of Killer Moth, Firebug and, of course, the Joker as you sought to clean up Gotham. The game has since achieved recognition on its own terms, with one company even releasing an action figure in NES colours.

While Batman's weaponry was present, one of the coolest features in *Batman* was actually the ability to leap off walls with a secondary jump. Rarely seen at the time, this feature enabled our hero to ascend through narrow vertical passages and save himself from otherwise fatal situations.

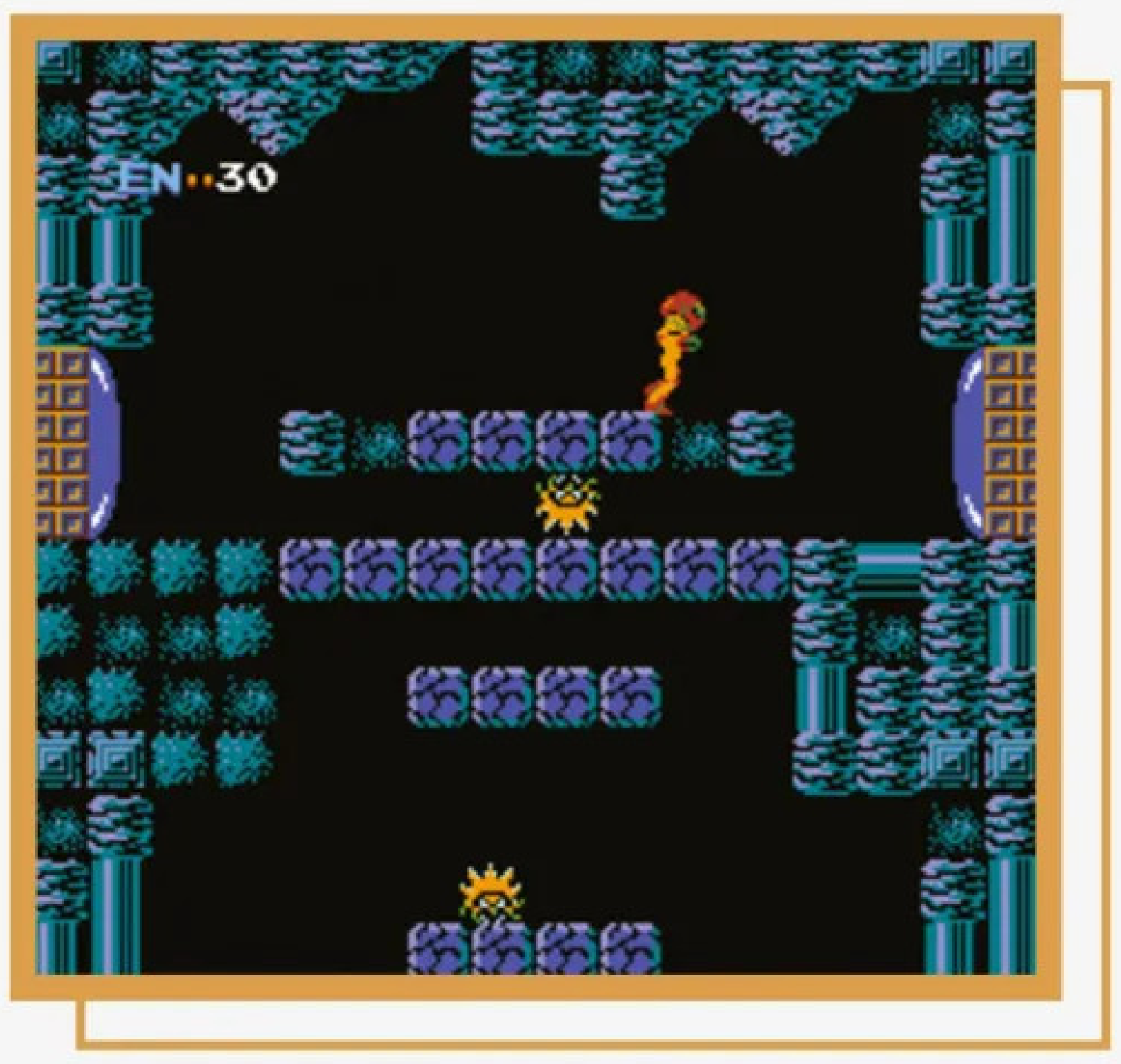


METROID

DEVELOPER: Nintendo **YEAR:** 1986 **GENRE:** Platform

7 **At its heart,** *Metroid* is a simple game – a platform-shooter in which Samus Aran seeks to recapture the dangerous Metroid organisms, set on the planet Zebes. However, it introduced many players to a new style of platform game, in which exploration was key and new abilities enabled access to additional areas. This template is so closely associated with *Metroid* that it co-named the Metroidvania subgenre, along with the *Castlevania* series which later adopted this style.

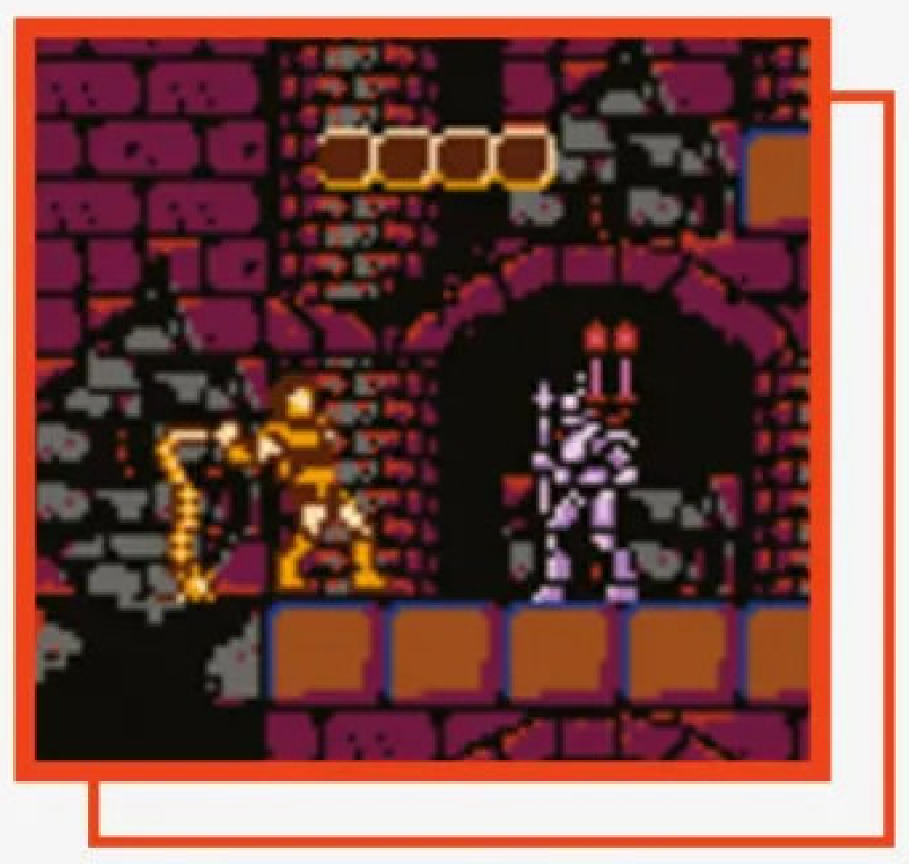
While the action is all well and good, *Metroid*'s best bits are the memorable twists which stick in the memory long after you've beaten the game. The revelation that Samus Aran is a female protagonist might have lost its shock factor, but its importance remains. As for the other twist – well, don't put your pad down after Mother Brain has been defeated…



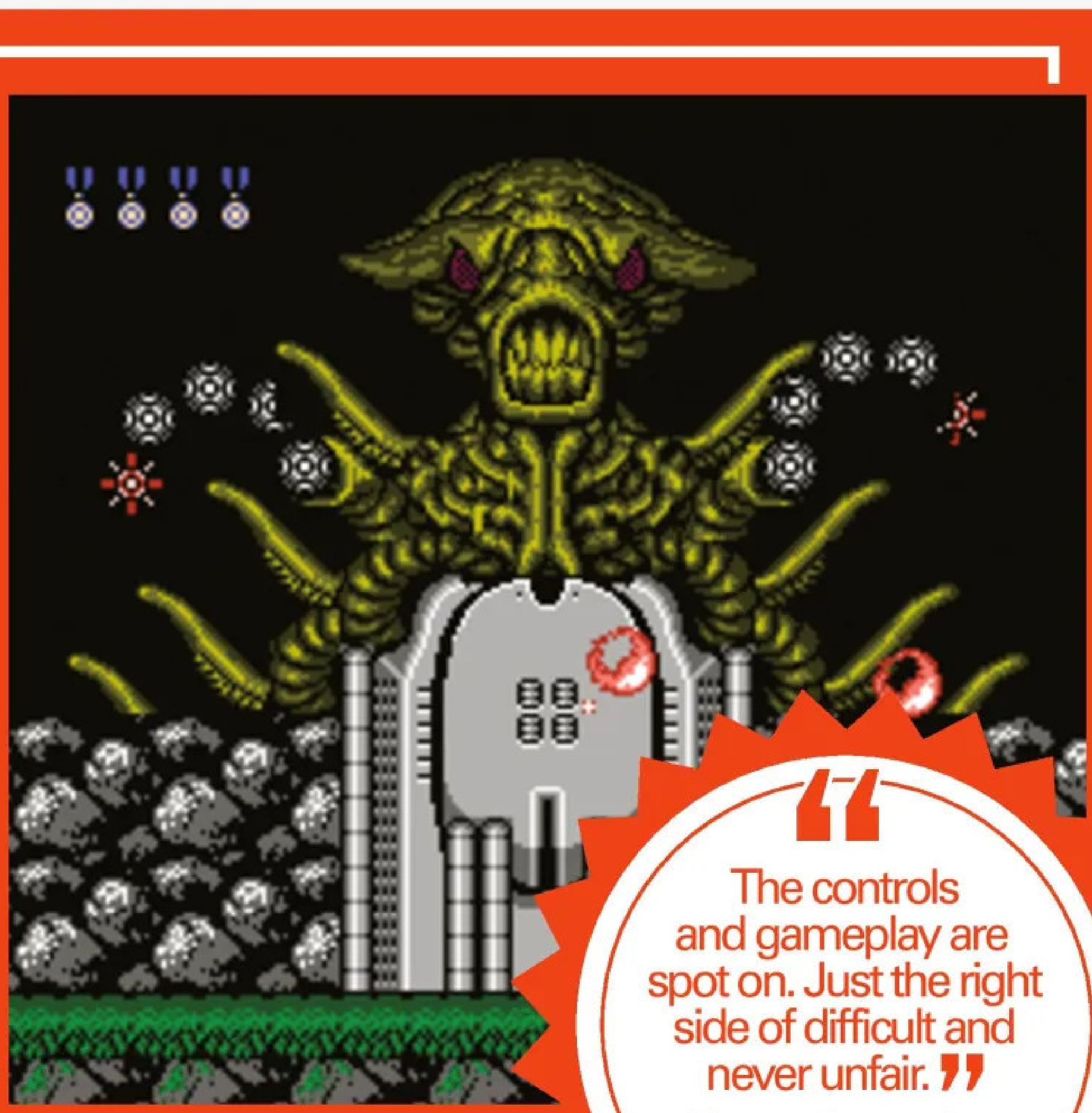
CASTLEVANIA

DEVELOPER: Konami **YEAR:** 1986 **GENRE:** Platform

6 **Konami's developers rarely** seemed more at home than when they were working on the NES, coming up with hits such as *Castlevania*. Borrowing some thematic cues from Capcom's *Ghosts 'n Goblins*, the game casts you as Simon Belmont, a vampire hunter out to kill Dracula. Each stage pits you against all manner of supernatural villains, but is well-designed to fit the crumbling castle theme and offers strong level design. The game is visually strong and offers memorable tunes, while tight control enables precise platforming and offers the use of secondary weapons such as axes and crucifixes, rounding off an excellent package.



> "Me and my brother would play it and we'd be like 'who's going to be Arnie, who's going to be Stallone?'"
>
> Claudio Sanchez, Coheed and Cambria

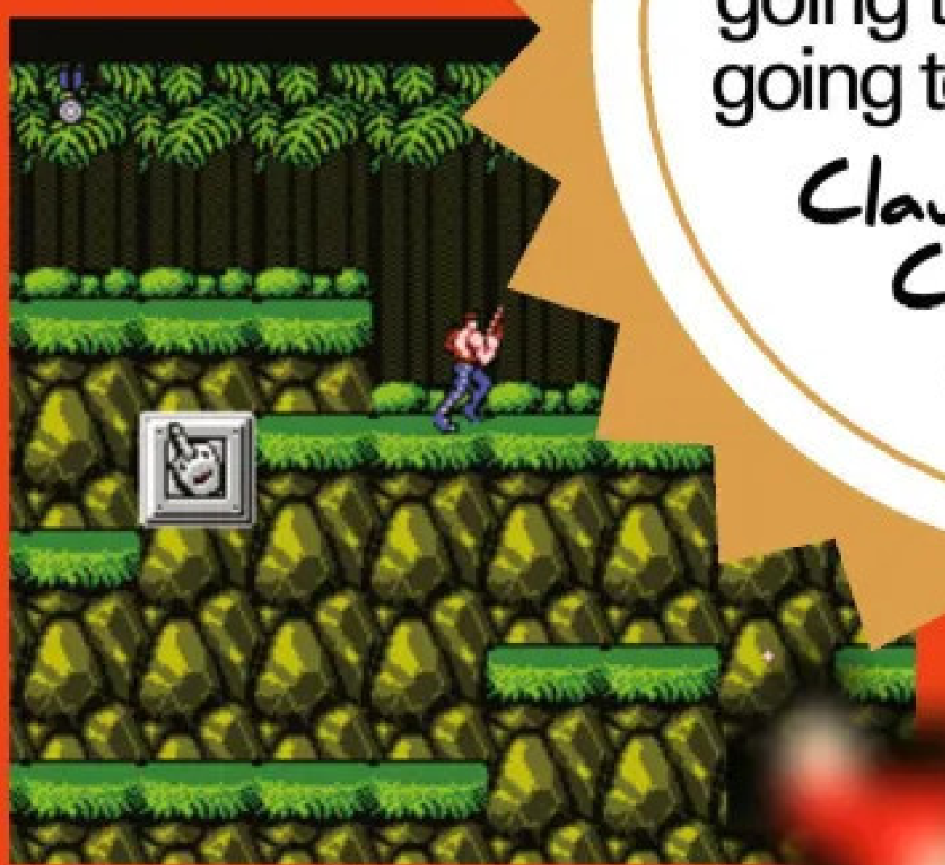


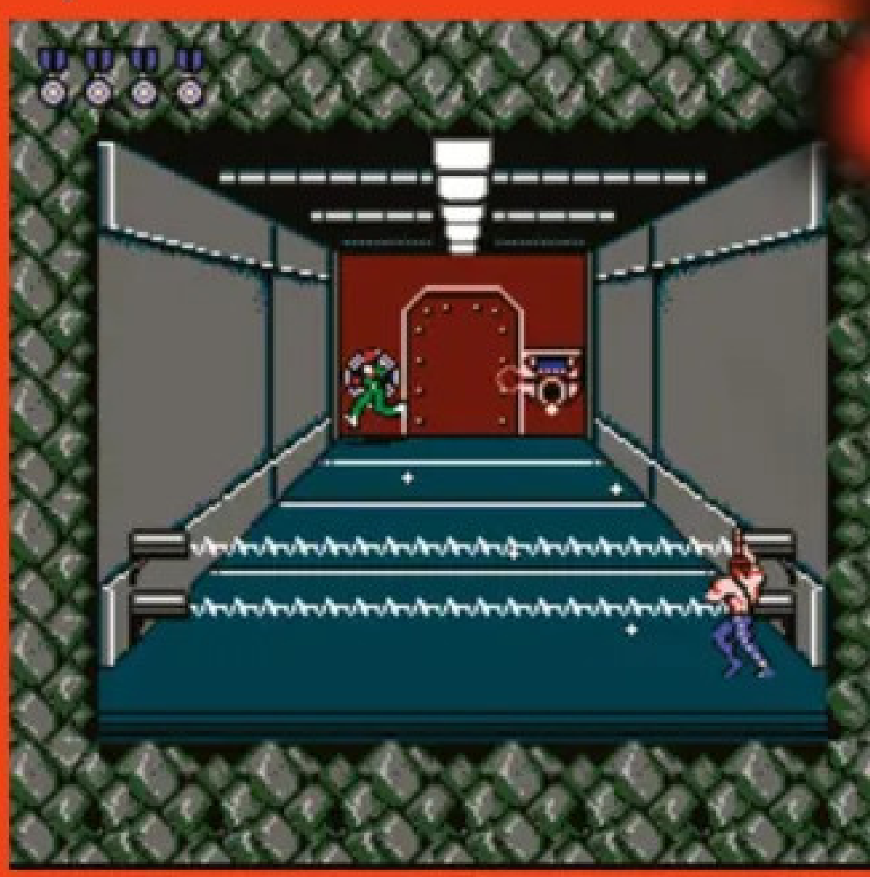
> "The controls and gameplay are spot on. Just the right side of difficult and never unfair."
>
> theantmeister

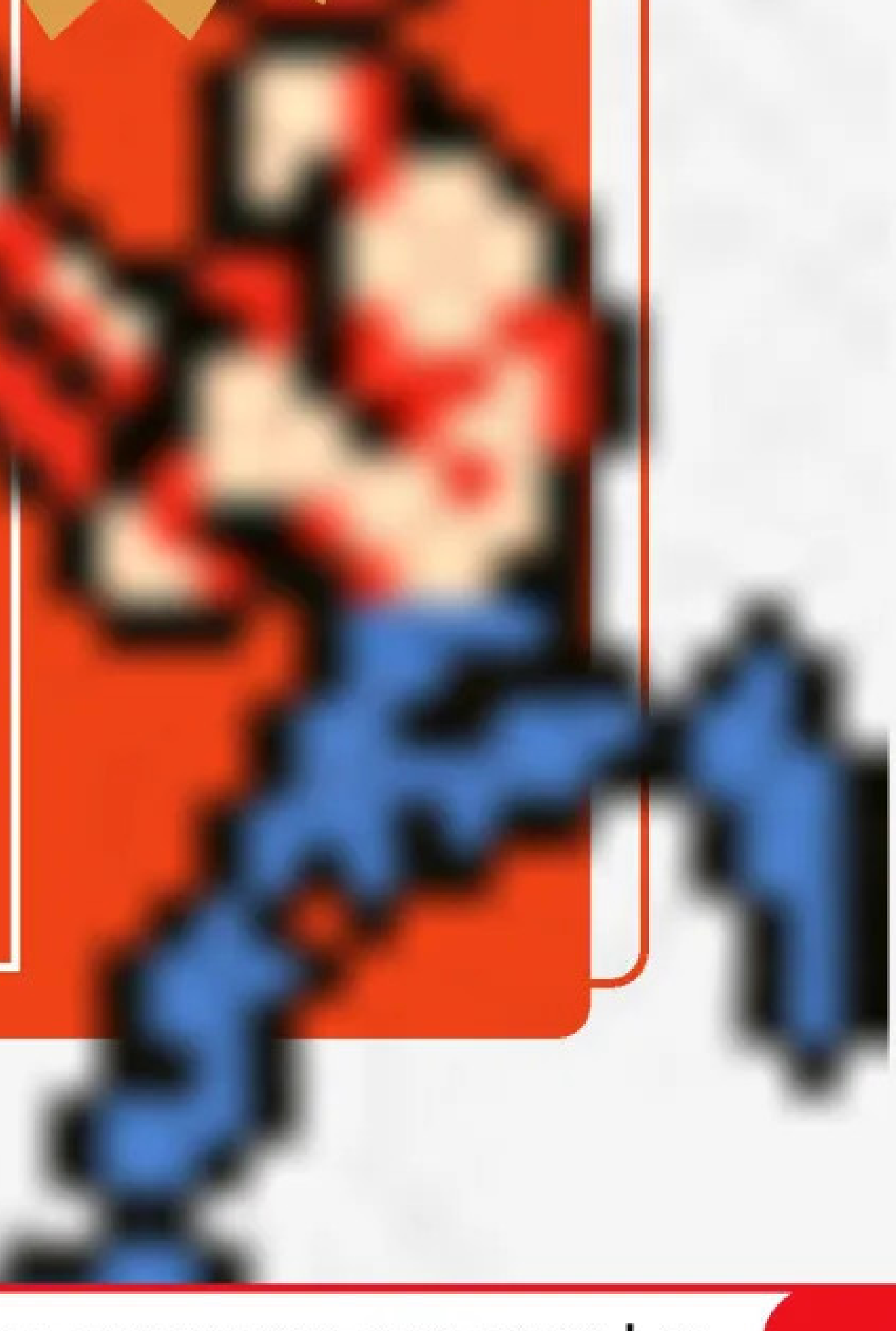
CONTRA / PROBOTECTOR

DEVELOPER: Konami
YEAR: 1988 **GENRE:** Run-and-gun

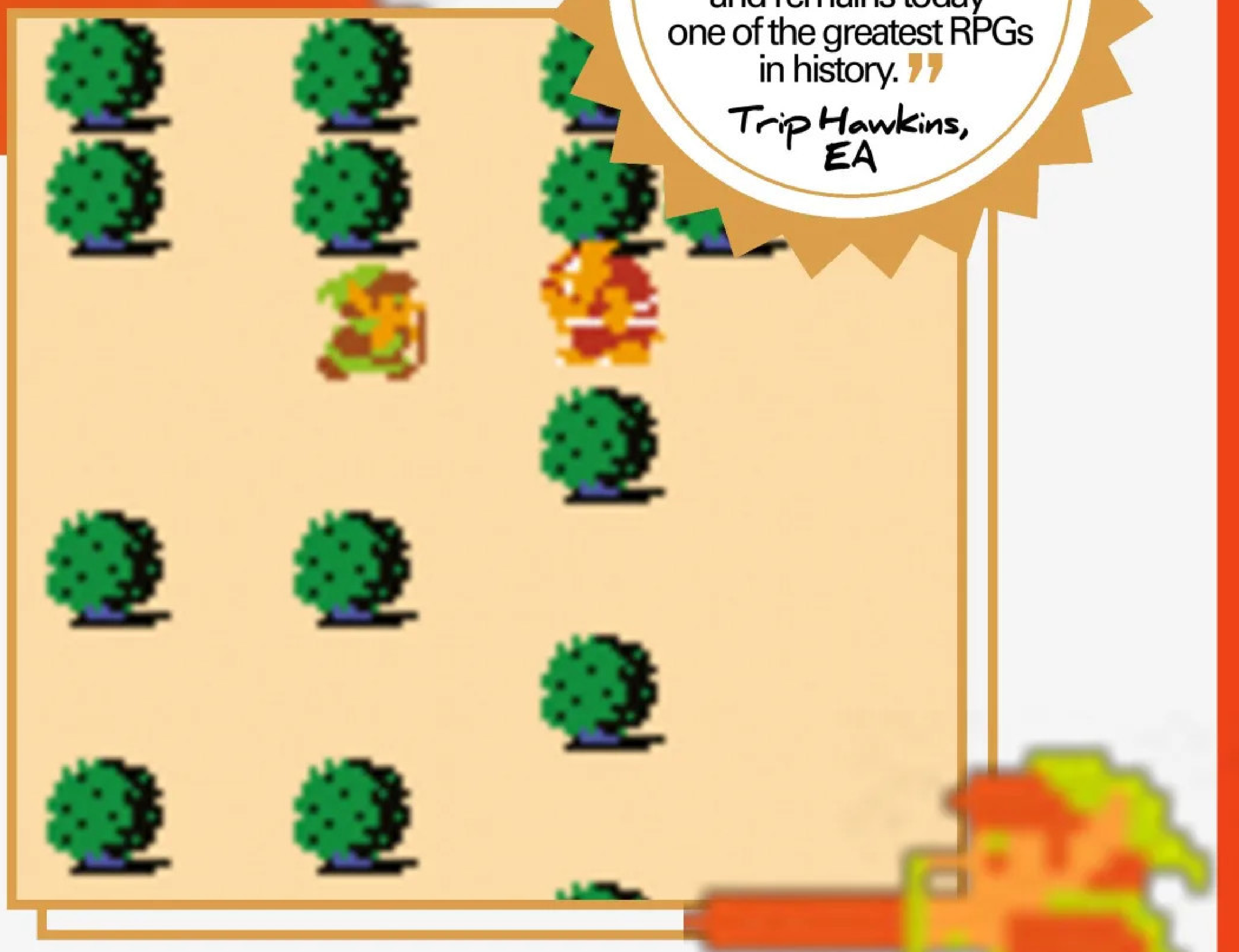
5 **This classic run-and-gun** is your favourite arcade conversion for the NES. *Contra* is a great example of Konami at the height of its powers. While the NES version of *Contra* makes a few changes from the coin-op, the game still offers the key things that make it so appealing: frantic action and a very stiff challenge. Though the game was renamed for Europe and censored in order to circumvent German censorship laws, the gameplay shone through.







> "*The Legend Of Zelda* brought the true power of the role-playing genre to console players and remains today one of the greatest RPGs in history."
>
> Trip Hawkins, EA



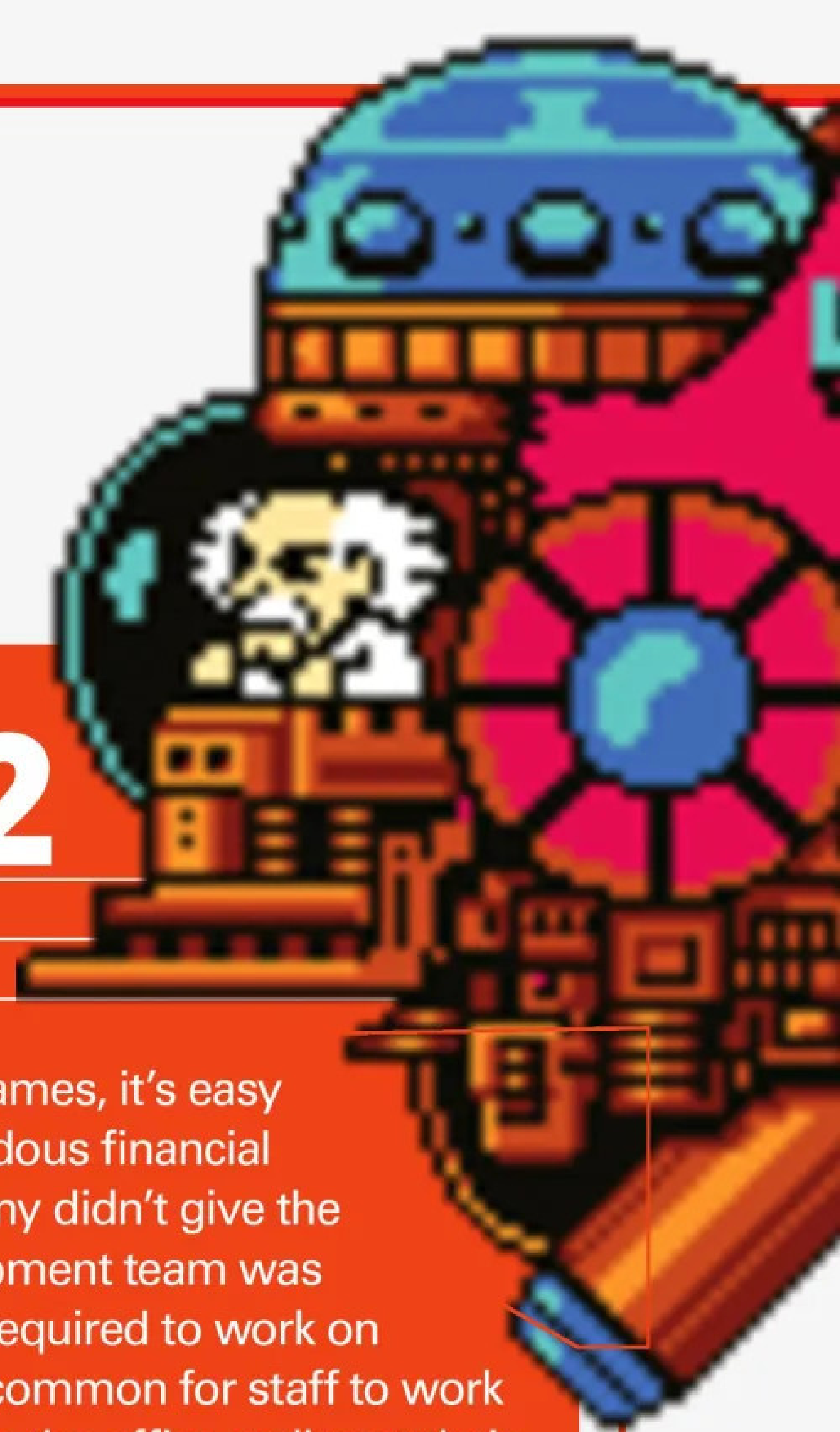
THE LEGEND OF ZELDA

DEVELOPER: Nintendo R&D4 **YEAR:** 1986 **GENRE:** Action-RPG

4 **From the second** you start Link's first adventure and set off towards the cave, the game starts sinking its hooks into you with the most lo-fi rendition of the now-familiar theme music – and just as later *Zelda* games can trace their elaborate scores back to Koji Kondo's chip music, they can do the same with their game design. The original *Legend Of Zelda* exemplifies the excellence of the core *Zelda* formula – a mixture of exploration, puzzles, and combat that draws you into the game until you're determined to see it through to the end. Plus, who doesn't love those beautiful gold cartridges?

CONTRA
S. 2
DE GAME
OS./DUCK HUNT
METROID
Nintendo
ENTERTAINMENT SYSTEM
ADVENTURE SERIES
Made in Japan
NES-MT-USA

> "Nigh on perfect controls, great weaponry and a very fair difficulty make this the stand out title for the NES."
>
> ArchaicKoala



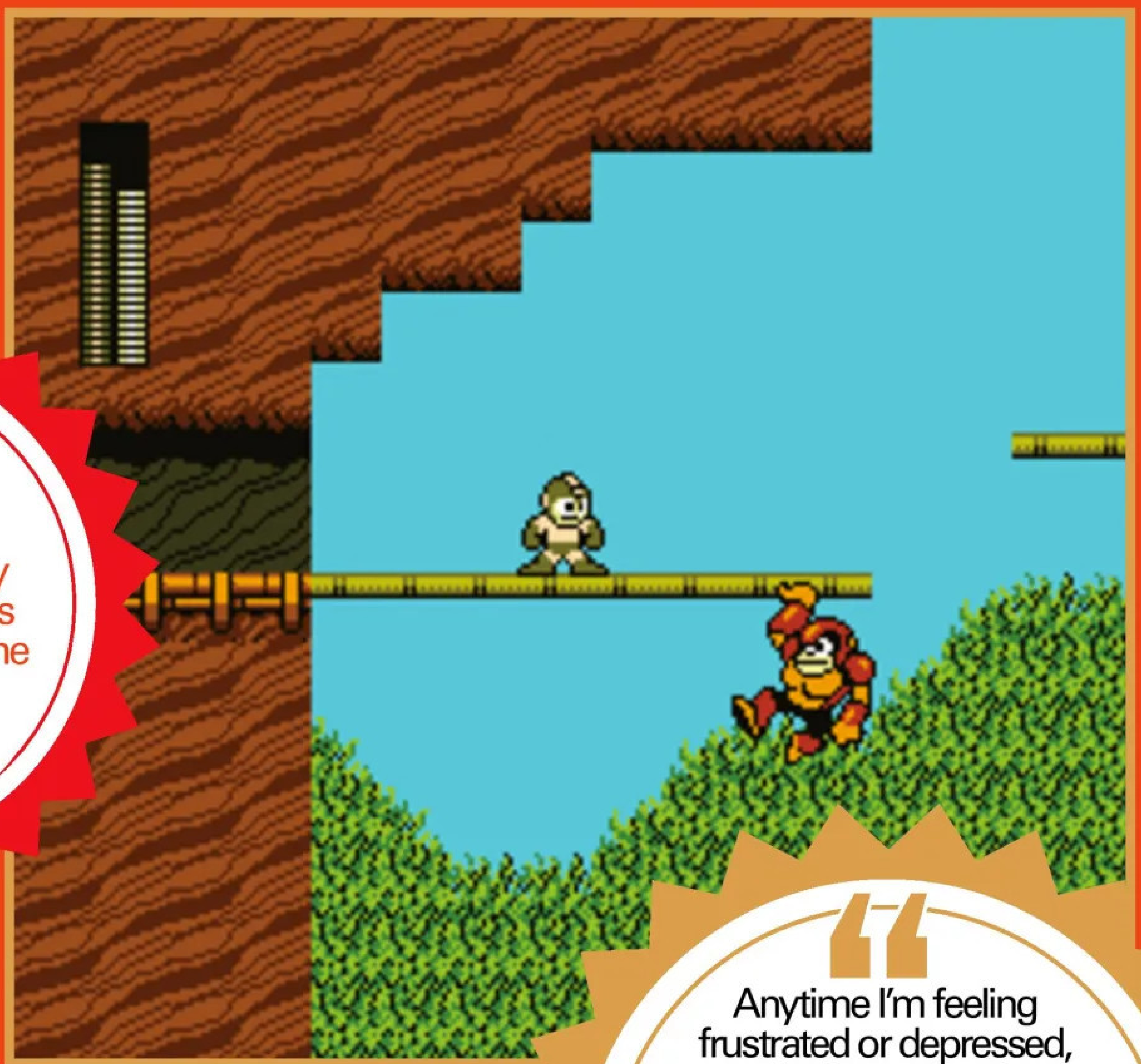
MEGA MAN 2

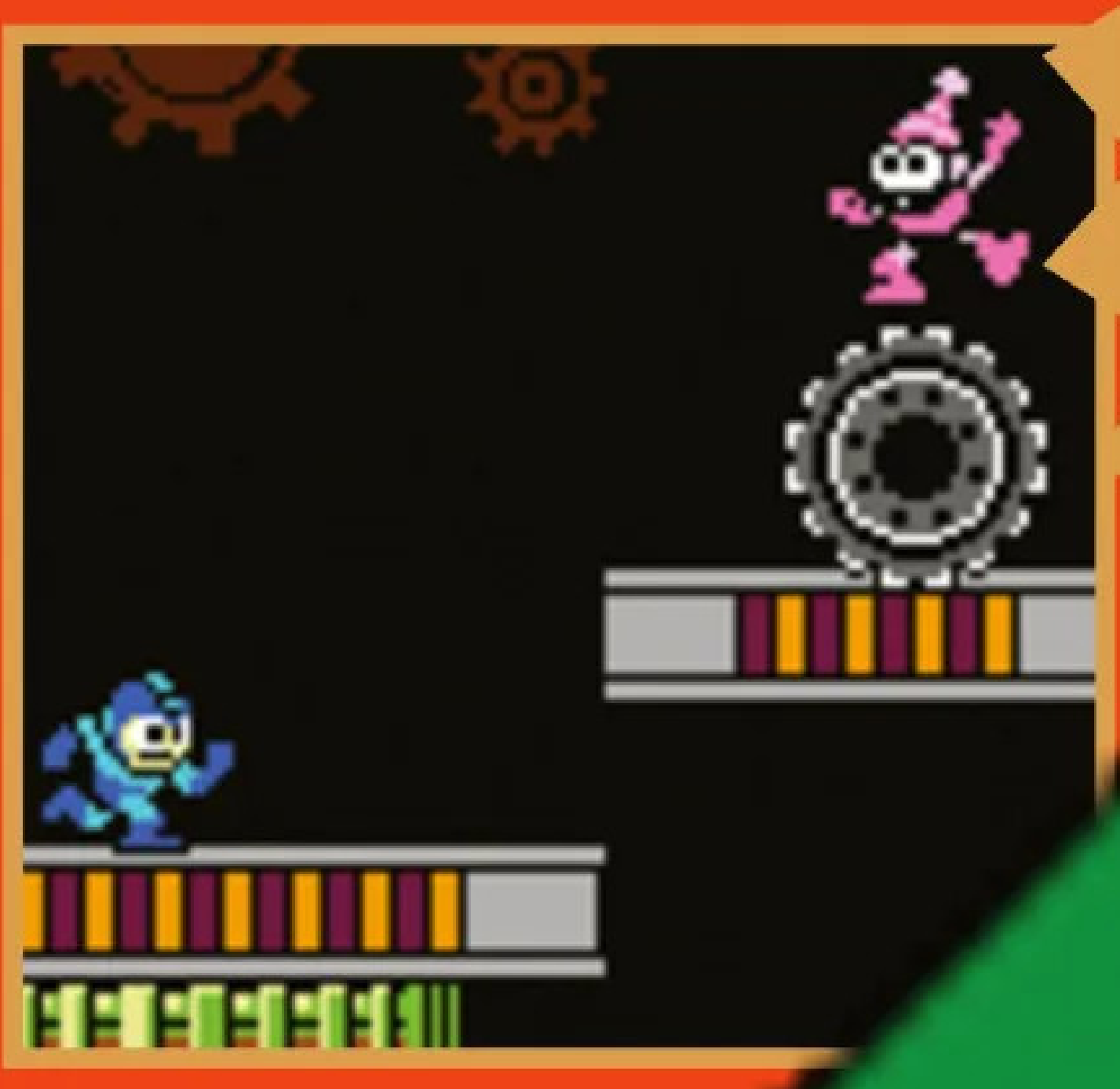
DEVELOPER: Capcom
YEAR: 1988 **GENRE:** Platform

3 **After almost three** decades of *Mega Man* games, it's easy to forget that the first one was not a tremendous financial success for Capcom. As a result, the company didn't give the green light for a sequel immediately – the development team was permitted to work on *Mega Man 2*, but was also required to work on other projects simultaneously. As a result, it was common for staff to work very long hours making the game, often staying in the office well past their regular working hours. *Mega Man 2* was a real labour of love.

For teams developing sequels, it can be tricky to work out what is broken and in need of fixing, and what is better left alone. Capcom trod that fine line carefully and reaped the rewards. Elements that were preserved from the original game include its platform-shooter set up and its non-linear structure, in which a player chooses a stage based on which Robot Master they'd like to take down. As before, once you've downed a boss you'll gain access to their weapon, some of which are more effective than others.

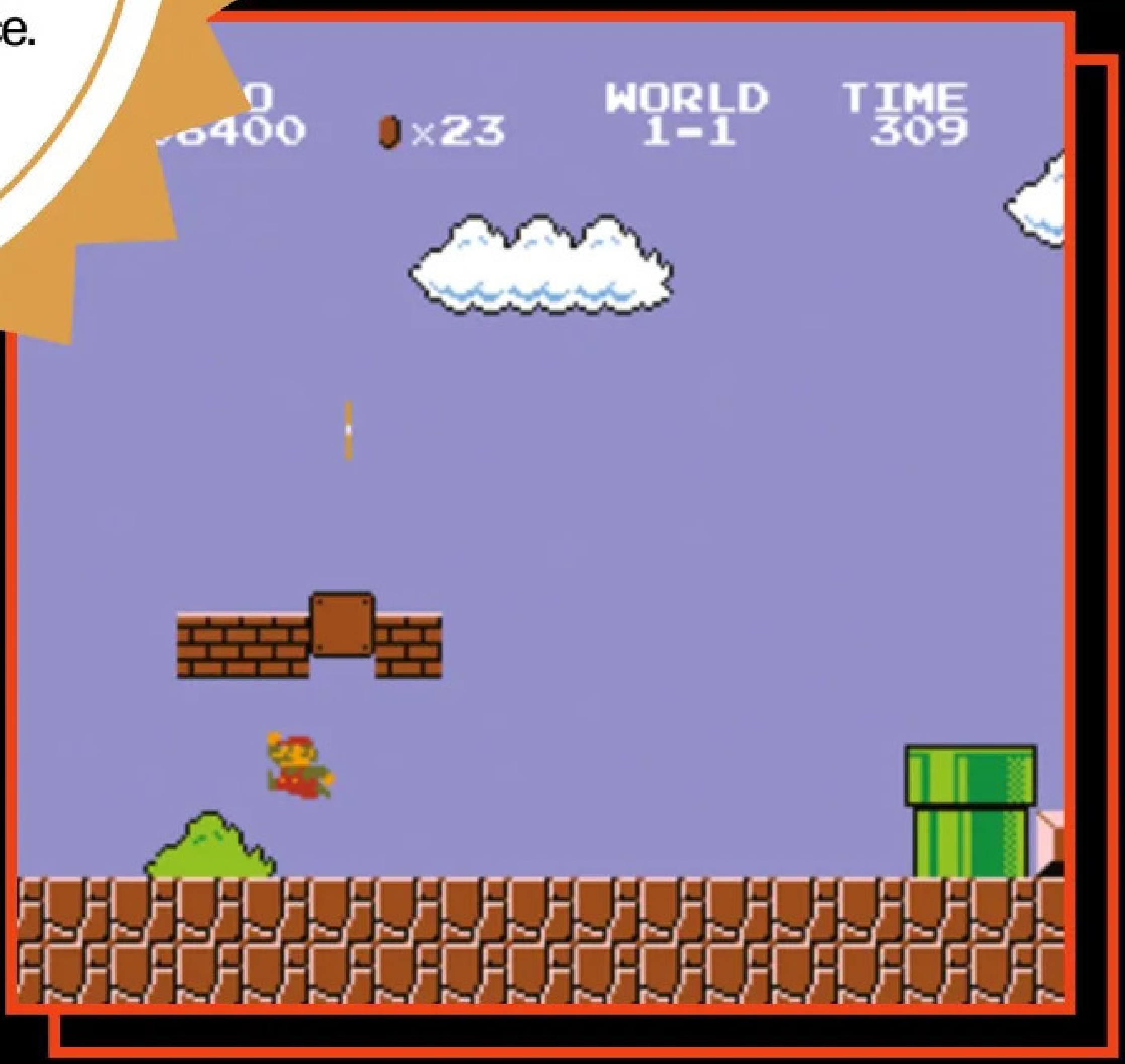
However, it's the improvements which make *Mega Man 2* the best of its series. Not only is it superior to its predecessor, the brutal difficulty level of the first game has been toned down. The game is still no pushover, but its challenge is more likely to cause fun than frustration – which is a good job since the game has eight Robot Masters, up from six in the first game. *Mega Man 2* went on to sales success and established the blue bomber as a star, a richly deserved outcome for one of the best NES games ever.





> "Anytime I'm feeling frustrated or depressed, or I'm lamenting the industry, all I have to do is load up *Mega Man 2*. I revert to being eight again, and I can't help but be happy, and smile."
>
> Jaime Griesemer, ex-Bungie, Halo 3 lead designer

> “The godfather of platform games – the game that spawned one million imitations. Nintendo have been the most influential game developer of all time setting so many trends and such a high quality bar that we can easily forget the magnitude of their importance.”
>
> Jon Hare, Sensible Software



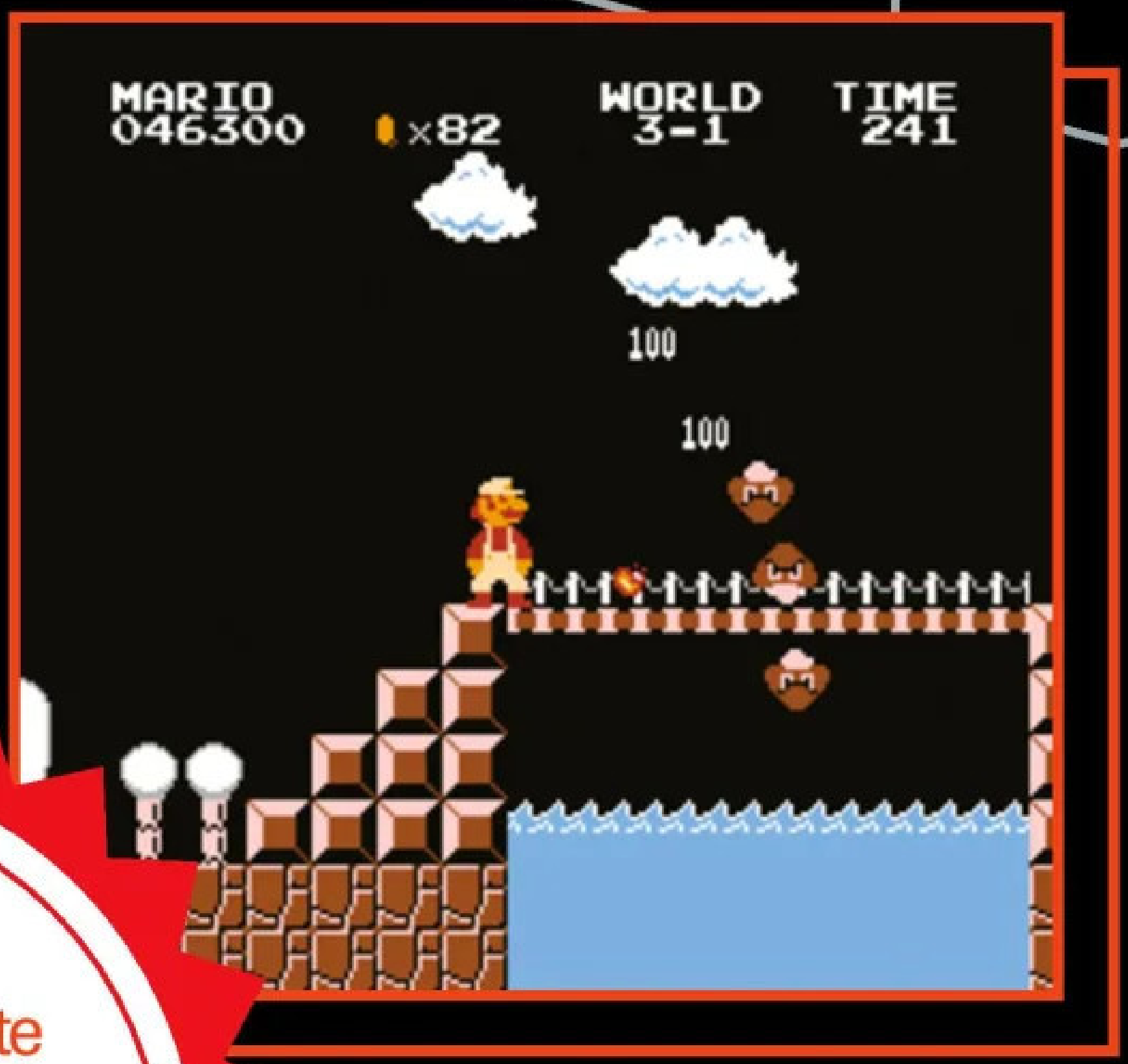
SUPER MARIO BROS.

■ **DEVELOPER:** Nintendo R&D4 ■ **YEAR:** 1985 ■ **GENRE:** Platform

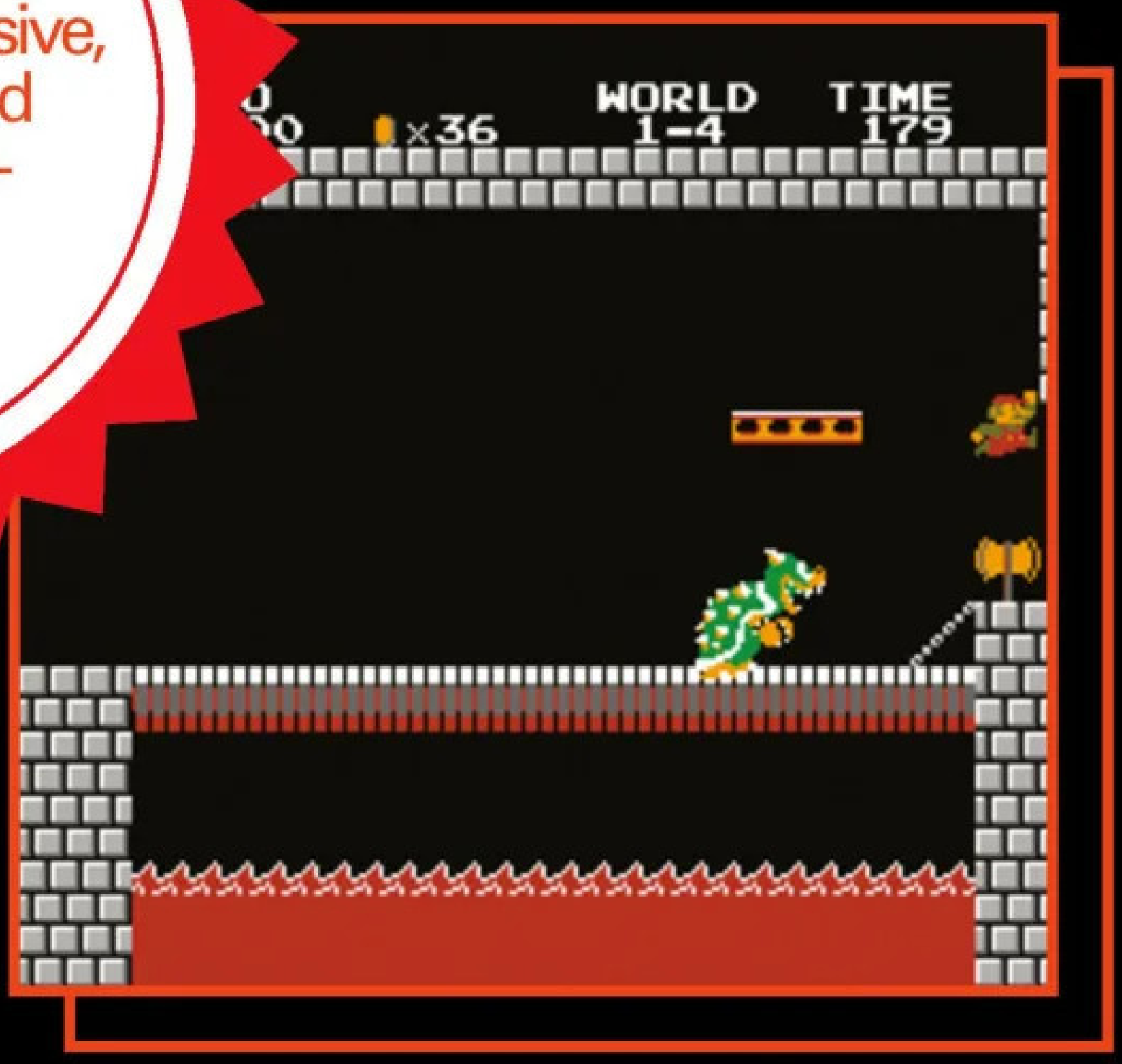
2 **We miss the** days of pack-in games. During the Eighties and Nineties, console manufacturers often seemed to make a special effort to ensure that every buyer would have at least one excellent game to play – and *Super Mario Bros.* was most definitely an excellent game. While Mario had made his debut in *Donkey Kong* and become a headline name in *Mario Bros.*, it wasn't until *Super Mario Bros.* that he became a real star. Whether it was alone or combined with *Duck Hunt*, *Super Mario Bros.*' long-term status as a pack-in game meant that over 40 million gamers would get to experience this star-making game.

One of the key secrets of *Super Mario Bros.*' success is that the game explains itself very well through level design alone. The initial screens are a masterpiece of game design, as you're wordlessly taught the function of enemies, mushrooms and question blocks. As the first game that many players experienced on a new system – and as the NES introduced so many players to videogames – this ease of learning was absolutely vital.

The learning curve also disguised that *Super Mario Bros.* was a complex game for its time, splicing many disparate elements of game design. We'd seen sections that allowed you to skip ahead in *Pitfall!*, power-ups in *Pac-Man* and bosses in *Phoenix*, but all of these combined in *Super Mario Bros.* to make an adventure of a kind never seen before. The variety was aided by the secrets that the game offered, from hidden items to warp zones, and difficulty was perfectly pitched to ensure while *Super Mario Bros.* posed enough challenge to last, but was no ordeal. Games that complement consoles this well are exceedingly rare.



> “The original and still a complete classic. Fast, responsive, superbly designed and endlessly re-playable.”
>
> nakamura



> “To me *Super Mario Bros.* original for NES is the definitive *Super Mario* platformer. Not only did it set a new benchmark for platformers, it also had an awesome soundtrack.”
>
> Jim Bagley, SpecialFX

retro GAMER
READERS' CHOICE

> “Seriously, this has to be the most impressive game to ever fit on a cartridge. There's so much gameplay, so much challenge packed into this cartridge… I can't tell you how addicting it was. I did finish the game and what a tour de force it was back in 1990. This game's inspiration is what started Id Software – we replicated the first level as a test and sent it to Nintendo!”
>
> John Romero, id Software

> “An astounding sequel – so much so that the later games have to be considered evolutionary after this revolutionary leap.”
>
> ArchaicKoala

5 reasons why it's great

1 Items like the Super Leaf gave Mario new abilities such as flight, enabling new level designs.

2 It offers a huge amount of content, with dozens of stages for players to tackle and master.

3 Even the level selection screen exudes character, thanks to its framing as an animated map.

4 If there's a argument against hopping around in a shoe, we have never heard it.

5 It perfected the *Mario* model, providing the template for every 2D *Mario* adventure since.

> “Remains for me the pinnacle of 2D platform gaming. Imaginative, infuriating, wonderful, frustrating, joyful, tearful and ultimately entirely rewarding and magical. I kept the NES on for a week to prevent loss of progress.”
>
> Gregg Mayles, Rare

SUPER MARIO BROS. 3

DEVELOPER: Nintendo R&D4 **YEAR:** 1988 **GENRE:** Platform

1

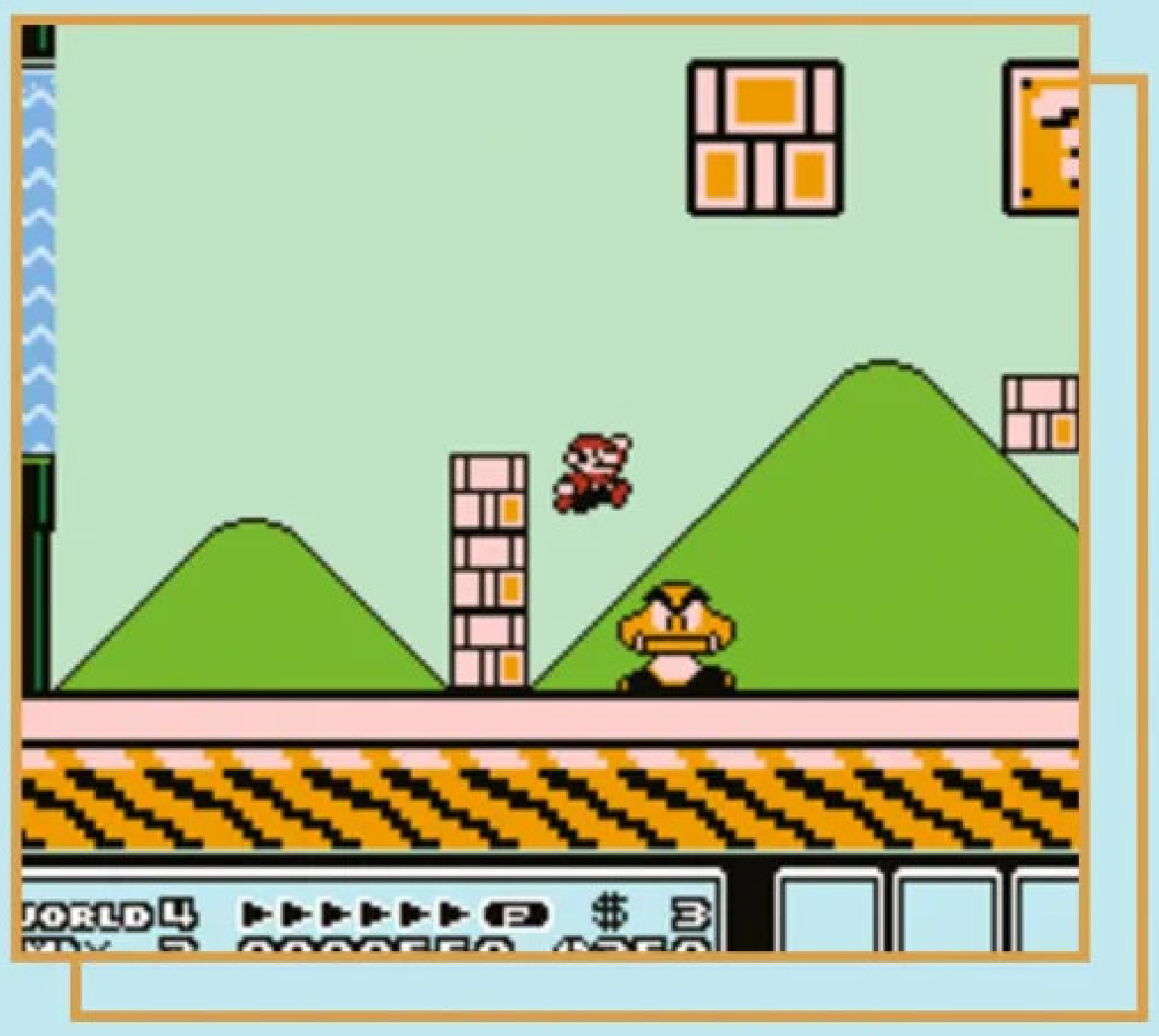
For Nintendo R&D4, developing *Super Mario Bros. 3* must have been a tough task. It would have been absurd to expect the development team to take an already-beloved classic and improve upon it in every single aspect. It is to the credit of Shigeru Miyamoto and his team that they didn't just attempt it, but managed to succeed in doing so.

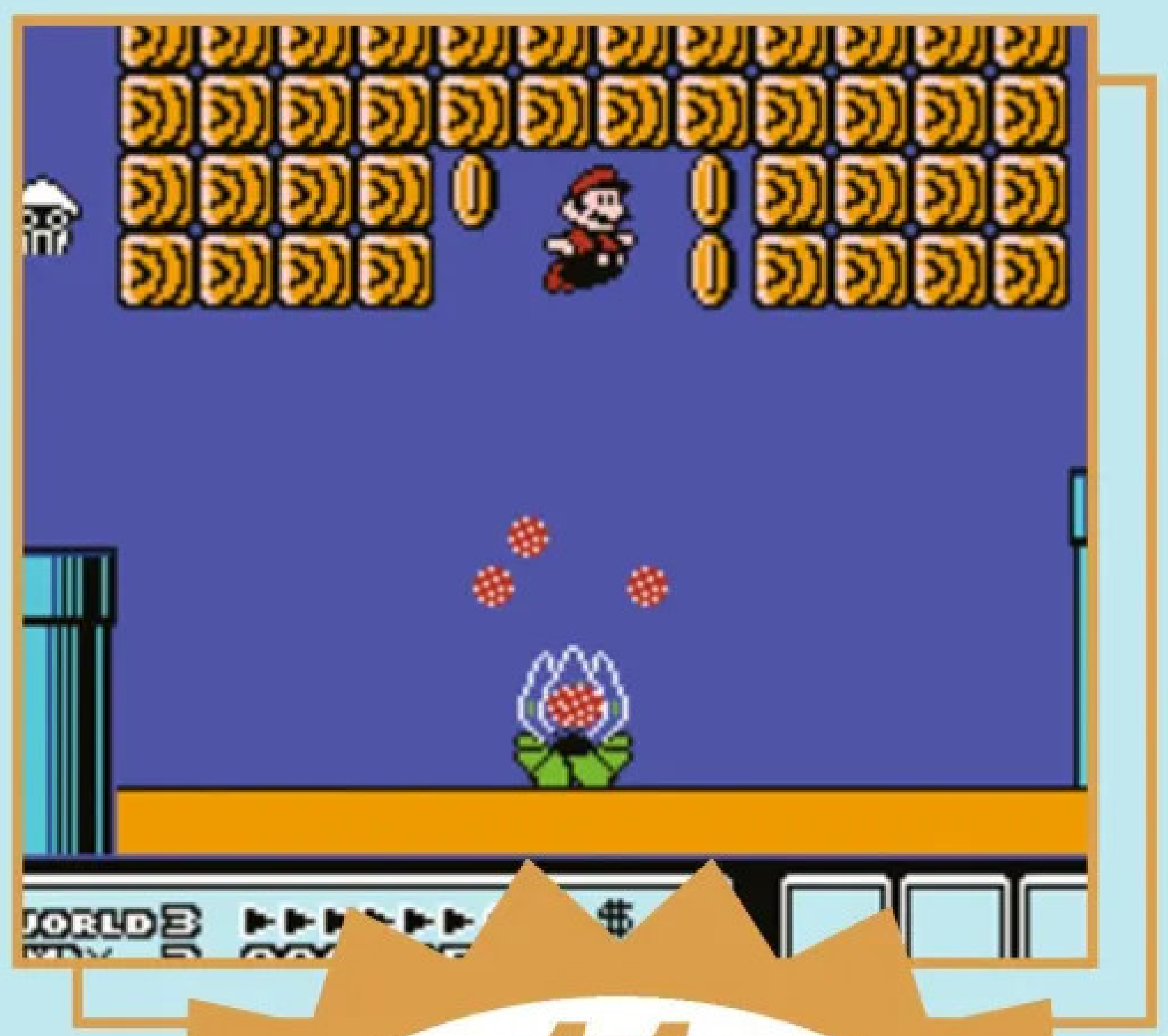
The Japanese version of *Super Mario Bros. 2* (known internationally as *The Lost Levels*) had been a very small upgrade over its predecessor, with slightly improved visuals and a few new hazards (such as the Poision Mushroom), and primarily offered more challenging stages for players that had mastered the original game. Contrast this with *Super Mario Bros. 3*, which offered all-new visuals, new music with additional sound effects, a variety of new enemy types, new power-ups, new blocks – if you could name something in the original *Super Mario Bros.*, Nintendo had managed to identify and implement a fantastic new spin on it in their new game.

These new elements allowed for some incredibly clever level designs too, from the floating platform challenge of stage 1-4 to the complex cannon arrangements of the airship levels. Many stages take new mechanics, implement them in every way you can think of, and then add a few you had missed just for good measure. Even something as simple as the introduction of sloped surfaces allowed for a new move and new opportunities for fun, as Mario could slide downhill on his backside and take out enemies with his momentum alone. What is truly amazing is that the high quality, inventive level designs are so consistent, given how numerous they are – the game's eight worlds feature an astonishing 90 stages.

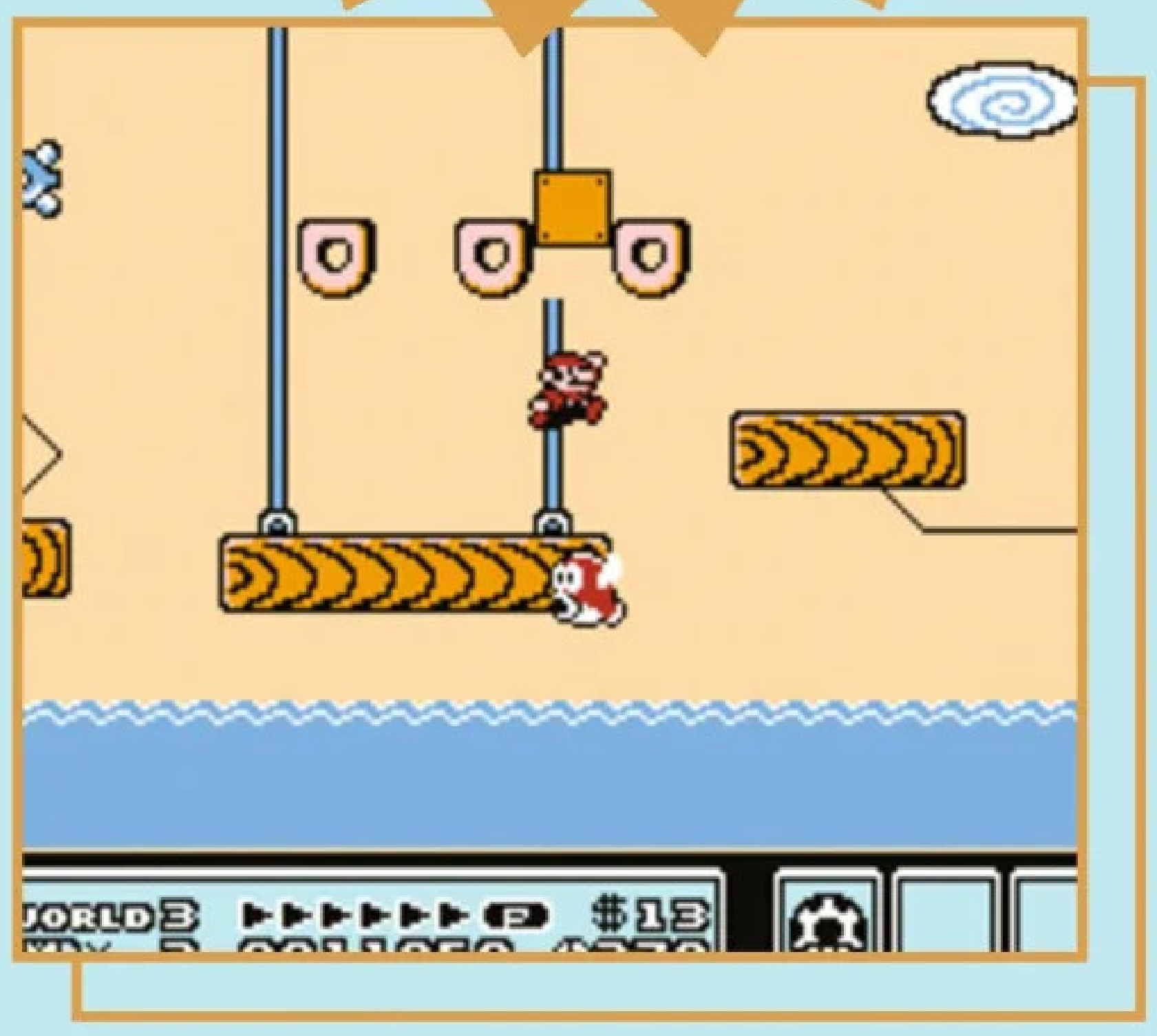
With the American audience whipped into fever pitch by pre-release footage in the movie *The Wizard*, *Super Mario Bros. 3* was always going to do well. Even so, the game was an unprecedented commercial success, becoming the best-selling non-bundled NES game – and along with its predecessor, one of only two such games to exceed the 10 million mark. The game has been ported and remade often and continues to perform remarkably, selling over 3 million copies when remade for the Game Boy Advance, and another million as a Virtual Console game on the Wii.

Super Mario Bros. 3 is a game that contains just about everything that a fan of platform games could want. If you want a game with tight, responsive control, that's covered. If you want variety, the game offers dozens of levels, many enemies and an array of interesting power-ups. If you want clean, attractive visuals and timeless tunes, this classic beast of a game has them. If there is such a thing as a perfect videogame, *Super Mario Bros. 3* is the closest that the NES ever got to delivering it.





> "In 1991 as a birthday treat my Dad took me to the World Of Commodore show and offered to buy anything I wanted. We left empty handed and instead bought *Super Mario Bros. 3*."
>
> Steve Lycett, Sumo Digital

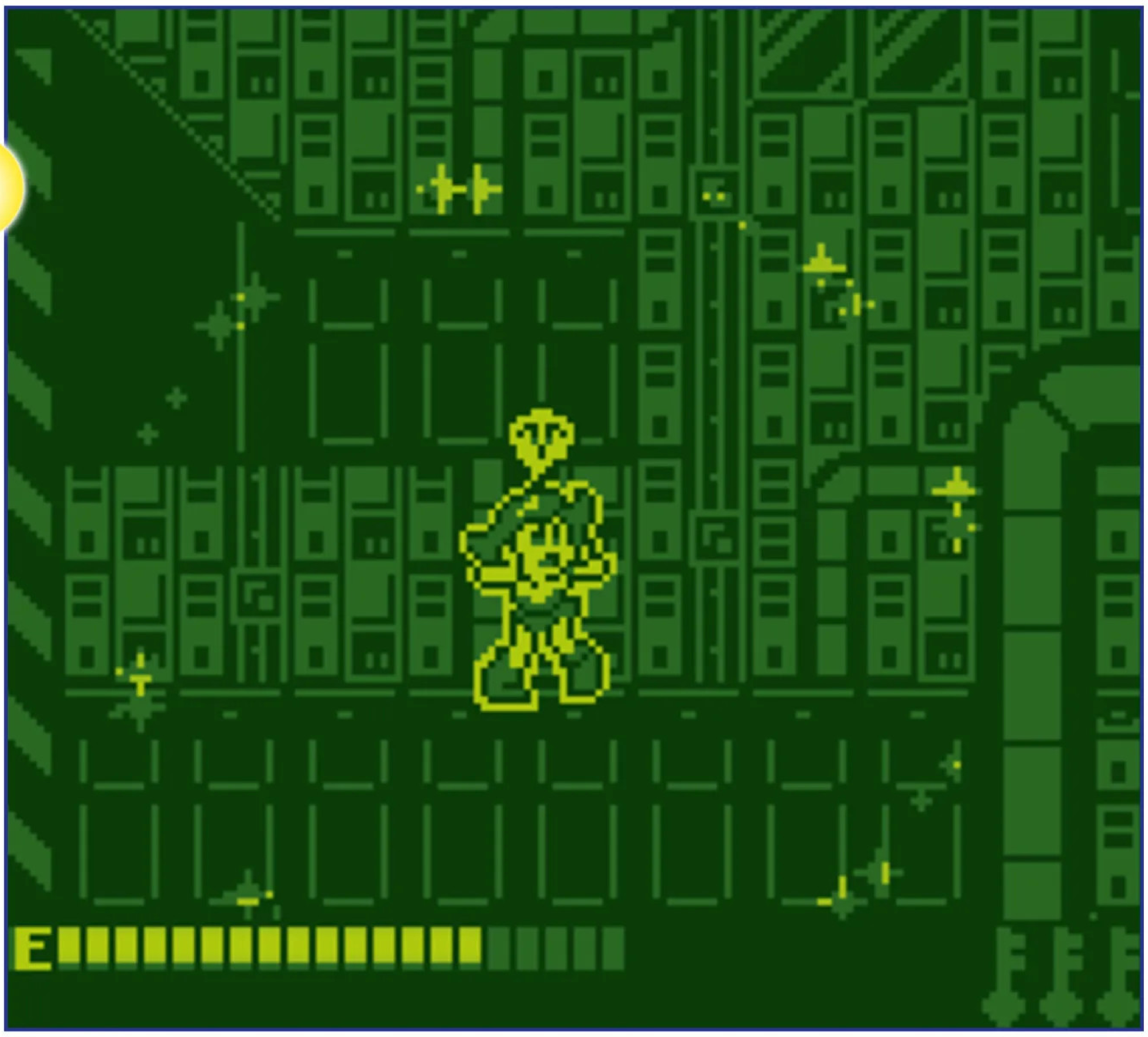


The Impact Of The GAME BOY®

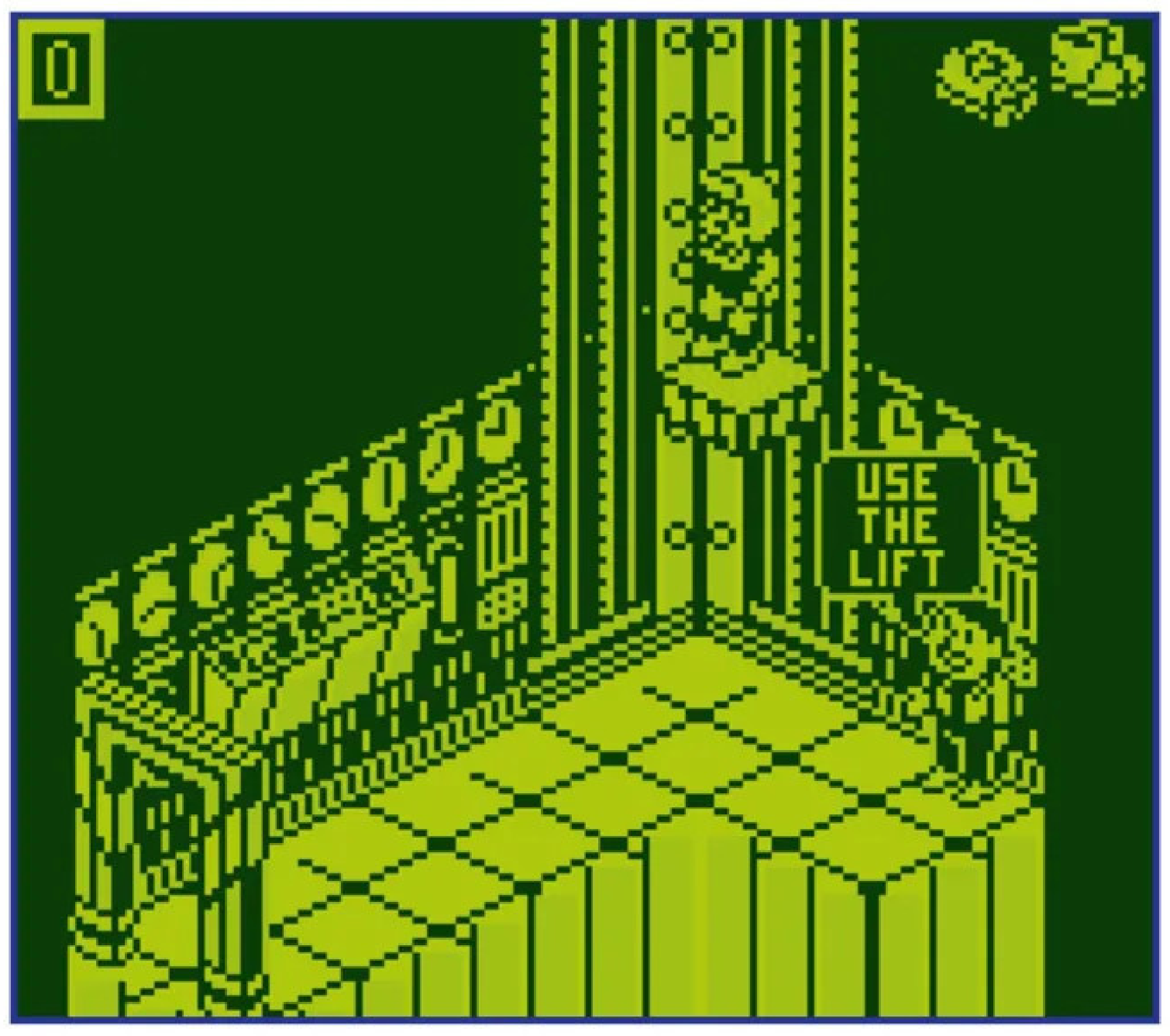
OVER THREE DECADES AFTER ITS LAUNCH, THE GAME BOY HAS BECOME MORE THAN A GAMING ICON – IT'S A TRUE CULTURAL PHENOMENON. WE LOOK BACK AT HOW NINTENDO'S MACHINE ACHIEVED SUCH A FEAT, AND SPEAK TO THOSE STILL FLYING THE FLAG FOR THE HANDHELD TODAY

Words by Nick Thorpe and Martyn Carroll

OFF·ON
DOT MATRIX WITH STEREO SOUND
MARIO×02 WORLD TIME
0 ×00 1-2 400
BATTERY
Nintendo GAME BOY™
A
B
SELECT
START
PHONES



» [Game Boy] *Avenging Spirit* is one of the great rare games for Game Boy collectors to hunt down.



LIFE 0000000
161

» [Game Boy] The Game Boy's array of licensed games were popular with younger gamers.

When the modern handheld console market developed in the late Eighties and early Nineties, it quickly became clear that one of the manufacturers was significantly more attuned to the challenges of creating a portable platform than the others. The designers of the Atari Lynx focused on pairing the familiar 6502 CPU with high-end custom graphics tech, with Epyx giving the system arcade-style graphical features like sprite scaling. Sega and NEC focused on how they might leverage their existing hardware in a new environment, ultimately basing the Game Gear and PC Engine GT on the Master System and PC Engine respectively. All of these consoles seemed to be born of similar thinking: they were consoles designed in service of the games. They allowed players experiences close to what they'd get elsewhere, and allowed developers to continue using the techniques they had elsewhere. With the Game Boy, Nintendo approached the problem from the other end – the company designed the hardware in service of the gamer.

Nintendo reasoned that the ability to actually *play* the machine was more important than *what* it could play, and that less impressive software was a worthy sacrifice. As a result, more than most pieces of videogame hardware, the Game Boy is a product of compromise. Where other handhelds had colour screens, the Game Boy had four greyscale shades (or green, if you're staring at that original screen). The other machines were backlit, and Nintendo's hardware relied on getting just the right level of light. Nintendo even opted for a custom processor based on the Z80, rather than the 6502 used in the NES, meaning that its developers couldn't simply reuse code. But it didn't matter if it couldn't play *Super Mario Bros* – Nintendo could just make a new *Mario* game tailored to what the machine *could* do.

Not everybody was impressed – it has been said that there was even some deal of scepticism prior to launch. Even those who would later come to be associated with the platform didn't always get a great first impression. "I do remember when a neighbour classmate showed off his Game Boy to me. I'd guess this was summer 1991, since he was playing *Blades Of Steel*," says Johan Kotlinski, author of the Game Boy music tool Little Sound DJ. "Being outdoors in the sun, it was rather difficult to see what was [happening] on the screen, and it did not come off as a particularly compelling entertainment option. As you might remember, there were a lot of competition at the time – most of us kids had a Commodore 64, NES or even an Amiga, and for mobile gaming the Atari Lynx seemed more desirable, even if too expensive. I already had my *Tetris* needs served by an original C64 tape, and the Game Boy did not seem like an improvement at the time. Certainly the load times were much faster on the Game Boy, but we kids had lots of time to waste anyway."

But Nintendo had made a judgement call, and it paid off. "Even though it was underpowered and its screen had issues with ghosting and no lighting, all those things that kind of worked against it also worked in its favour – it made a very economical system," says Jeremy Parish, a veteran videogames journalist ▶

BOY WONDERS

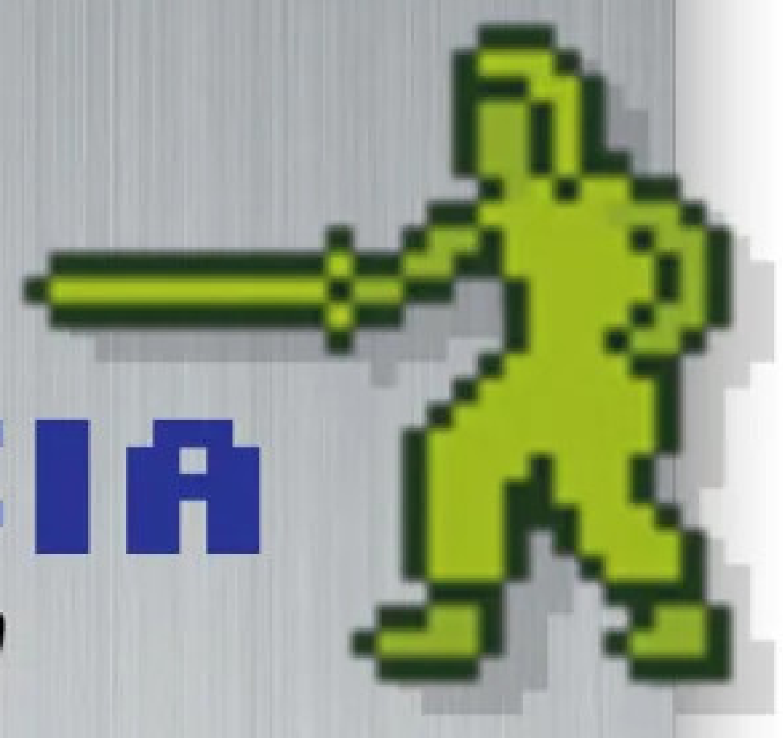
GAZ THOMAS,
Developer of
Owyn's Adventure

JEREMY PARISH,
Author of
Game Boy Works

MATHEW BOYLE,
Game Boy
collector

MINI MAKING OF...

PRINCE OF PERSIA



ED MAGNIN CONVERTED JORDAN MECHNER'S CLASSIC TO THE GAME BOY

How did you end up working on the Game Boy and coding *Prince Of Persia*?

My boss woke up one day and decided to swap me from the NES to the Game Boy. It was the best thing he ever did. The Game Boy represented freedom for me. When I'd go to GDC or E3 I could carry my work in my pocket and walk up to a booth and show it to someone, no appointment necessary. I did *Caesars Palace* first, then *Prince Of Persia*.

Were you a fan of Jordan Mechner's original game?

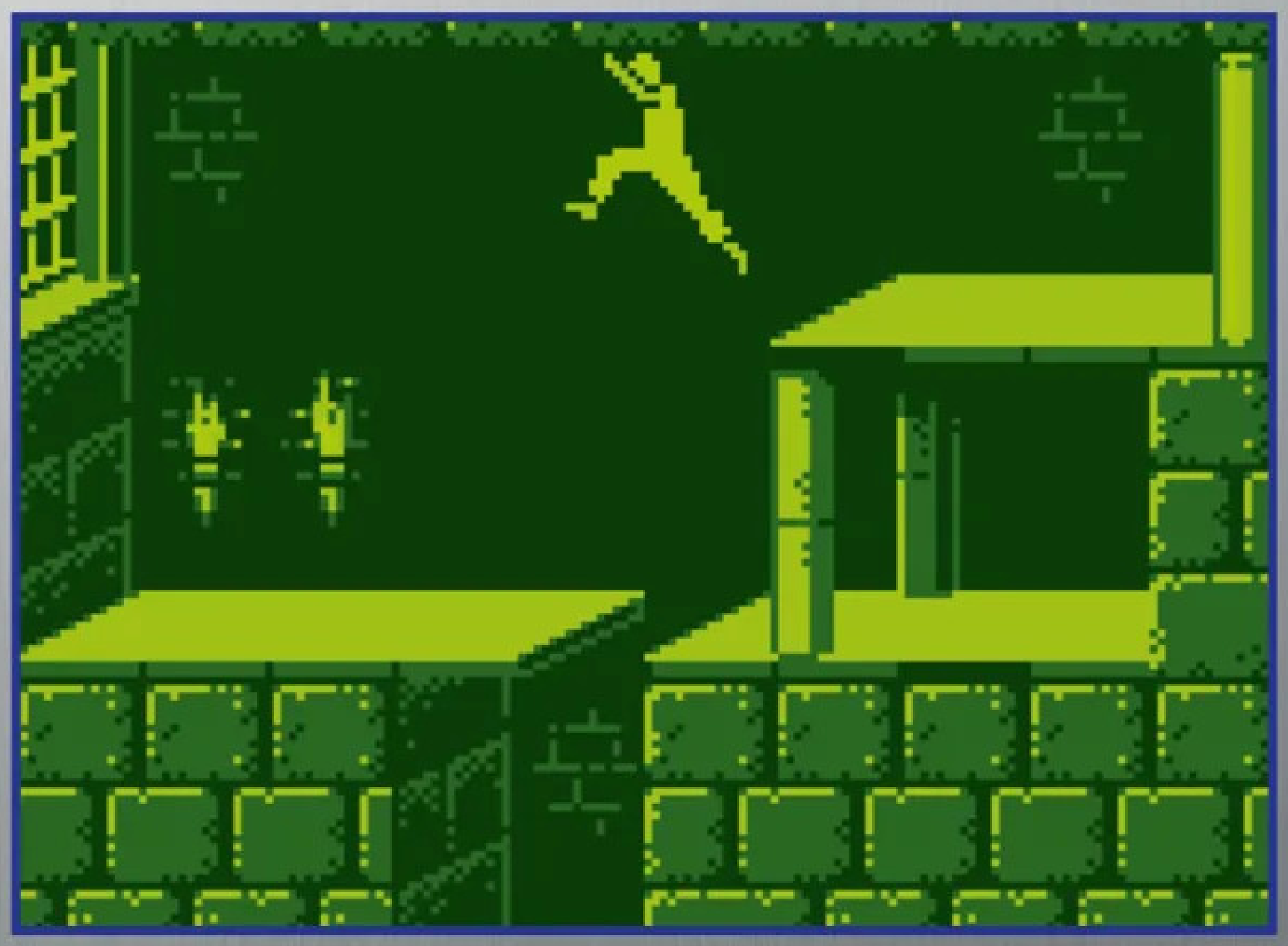
I quickly became one. I played the PC version but knowing he did the original on the Apple II was even more impressive. I played the PC version constantly to make sure ours worked as well or better on the Game Boy.

Did you have any say in the cart size selected for the game, and was it a struggle to make it fit?

Publishers were cheap. They didn't want to pay for a larger cartridge or a battery to back-up RAM in the cartridge. It would have cost a dollar or two, but then multiplied by their mark-up that would have added five or six dollars to the price of the game. If you look back, only Nintendo and maybe one or two publishers ever released games on larger cartridges or with memory backup – the rest of us had to make convoluted password save systems. And yes, it was a struggle to make it fit.

You later did a second version of the game for the Game Boy Color. Did the updated hardware make for an easier conversion?

Not really. In addition to adding colour, Nintendo required developers to add additional levels or features, so we added a training level. At the very end of the project, the Nintendo colour police (Club Wario) asked us to make every level a different colour. We had worked hard to make the palace and dungeon levels look really good, so we resisted changing colours. On a conference call I asked Nintendo, 'Do you want it to look good or do you want obvious use of colour?' They answered, 'Obvious use of colour.' That was it. We had to give them what they wanted or they wouldn't let us publish it.

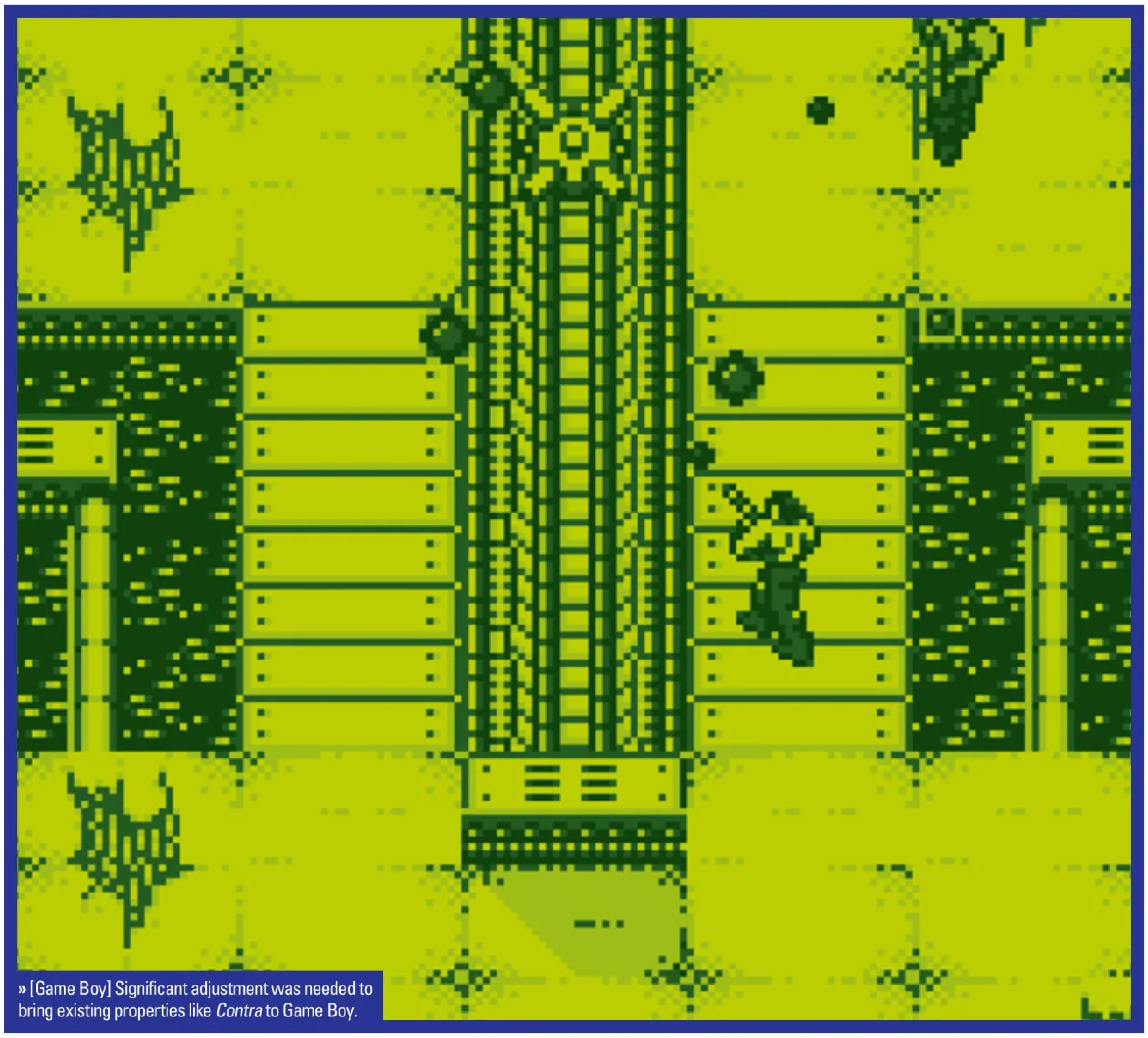


> "It was the first time I had ever seen a console, let alone a handheld, and it was very exotic"
>
> Gaz Thomas

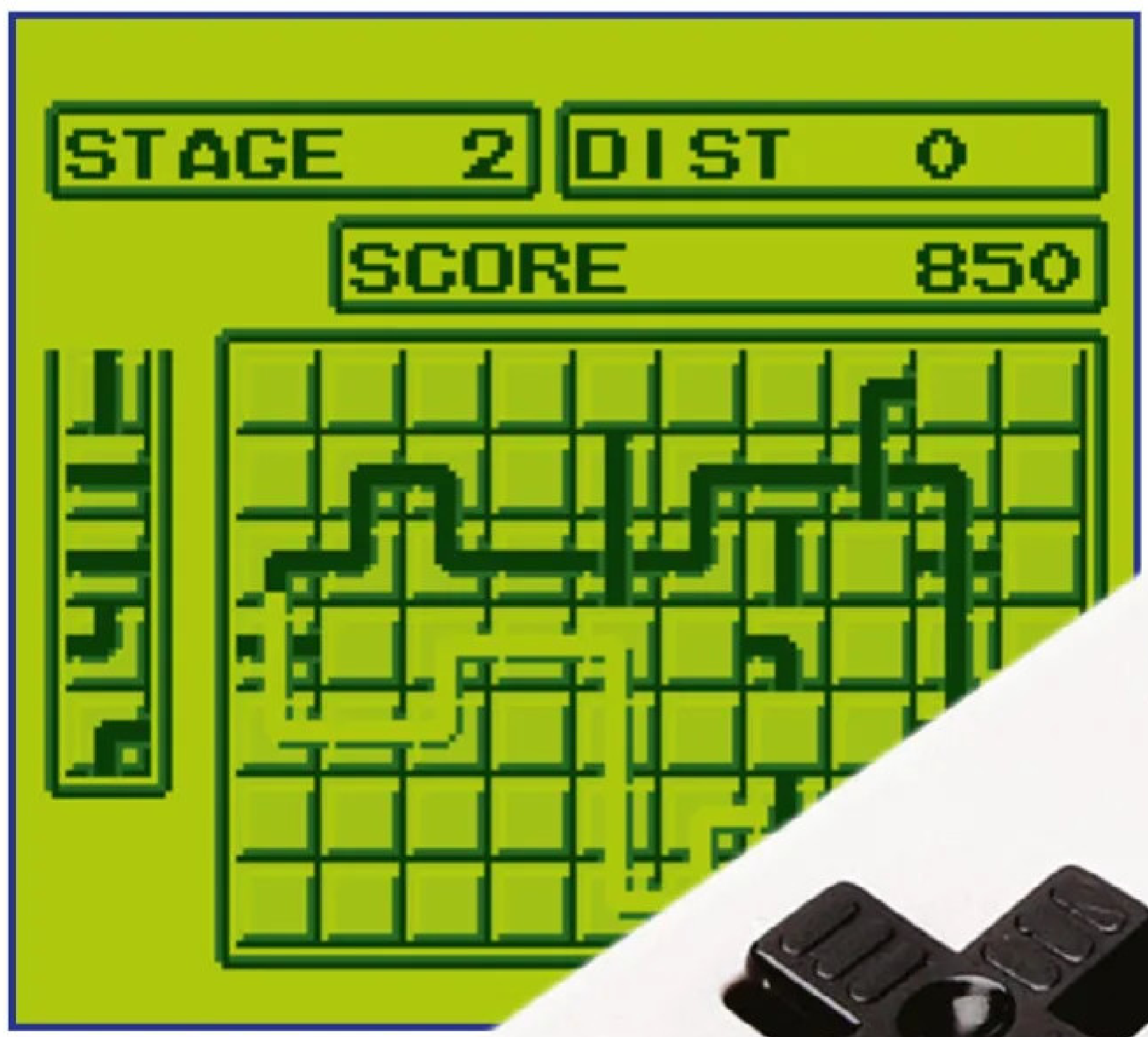
▶ and creator of the *Game Boy Works* video and book series. The Game Boy was half the price of the more impressive Atari Lynx, and would run three times as long on fewer batteries. This made it attractive to parents, and the built-in display meant that it didn't tie up the TV. It was a viable purchase, even for families that already owned a console. "I first received a Game Boy for Christmas when I was a kid. I'd been trying to play my brother's NES and so I got my own portable system to keep peace in the house," says Mathew Boyle, a Game Boy fanatic whose game collection consists of approximately 800 games. "Of course, I was a bit too young I think to really appreciate it, but I would play *Kirby's Dream Land* until the batteries ran dry!"

As good as games like *Kirby's Dream Land* were, one game overshadowed the rest when it came to selling the system to players – including those with no previous gaming experience. "The first time I laid my eyes on a Game Boy was at my cousin's house, he had gotten one for Christmas. It had *Tetris* on it and he was showing my dad and I," says Gaz Thomas, an indie developer whose work includes *Owyn's Adventure* as well as contributions to *Hydroventure* and *Stealth, Inc.* "It was the first time I had ever seen a console, let alone a handheld, and it was very exotic. I was only five at the time but I could understand the game and the music was entrancing!" Indeed, *Tetris* could be universally understood and its new handheld home proved to be conducive to spreading the game's appeal. Plenty of young players would frequently find their systems being borrowed by parents and grandparents.

Indeed, while Sega and Sony get much of the credit for bringing older audiences into the videogaming market during the Nineties, Nintendo's machine had a killer app that appealed to players across all demographics. "It definitely did reach a broader spectrum of gamers than the NES did, and Nintendo recognised that from the very beginning," notes Jeremy. "Some of their early ads were targeted at working professionals and adults, promoting games like *Tetris* and saying, 'Hey, you can enjoy yourself when you're waiting at the airport – it's not just



» [Game Boy] Significant adjustment was needed to bring existing properties like *Contra* to Game Boy.



» [Game Boy] Puzzle games like *Pipe Dream* worked well with the Game Boy's blur-prone display.

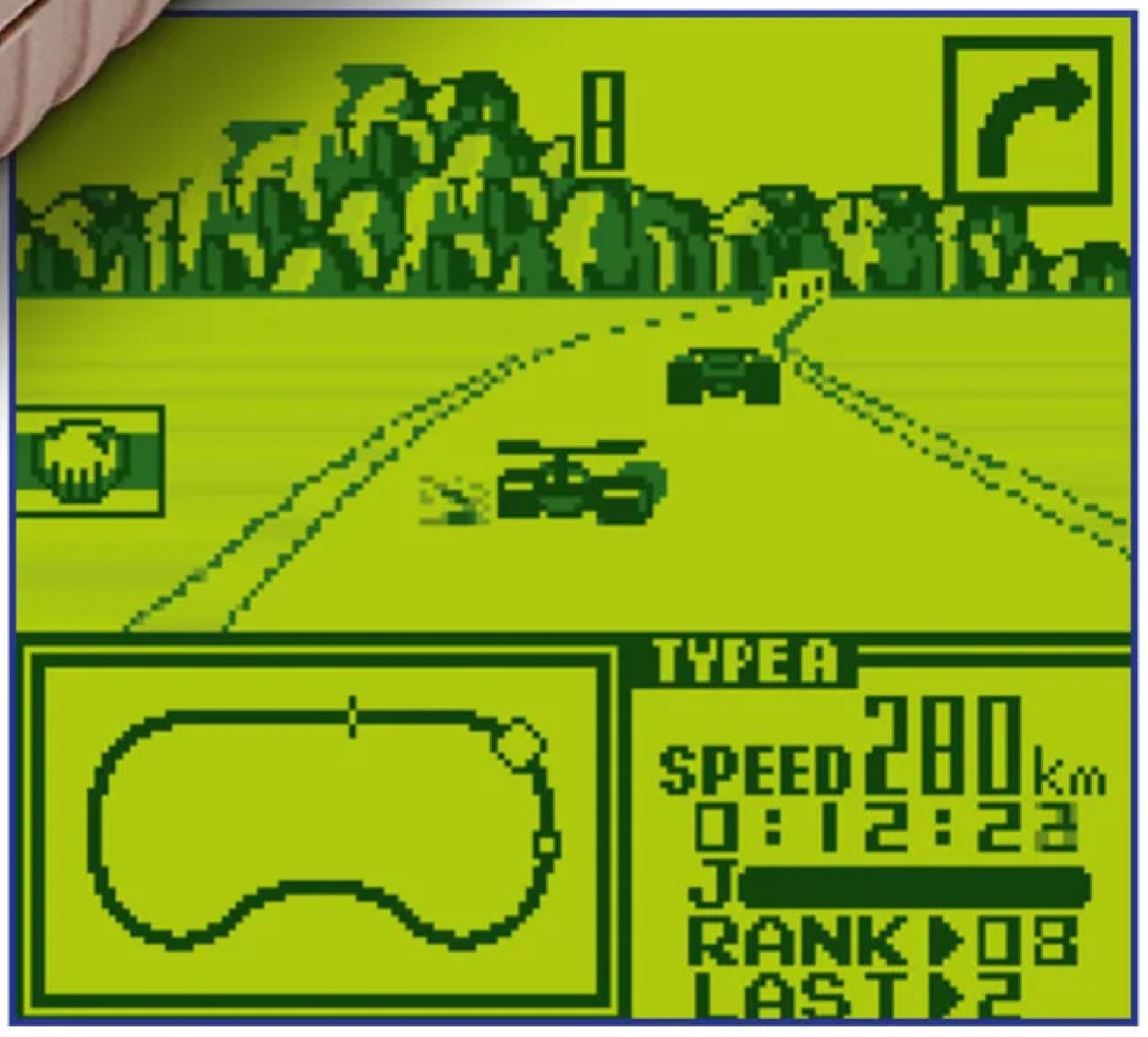
Nintendo GAME BOY™
DOT MATRIX WITH STEREO SOUND
BATTERY
Nintendo®
SELECT
START
B
A
PHONES

for kids, even though it's called the Game Boy.'" That campaign had the tag line "Have you had your fun today?" and deliberately targeted non-gaming media, appearing in magazines such as *GQ* as well as on TV. Even then-First Lady Hillary Clinton admitted to buying a Game Boy for herself in a 1993 interview with *Time* magazine, after having become a fan through playing her daughter's machine.

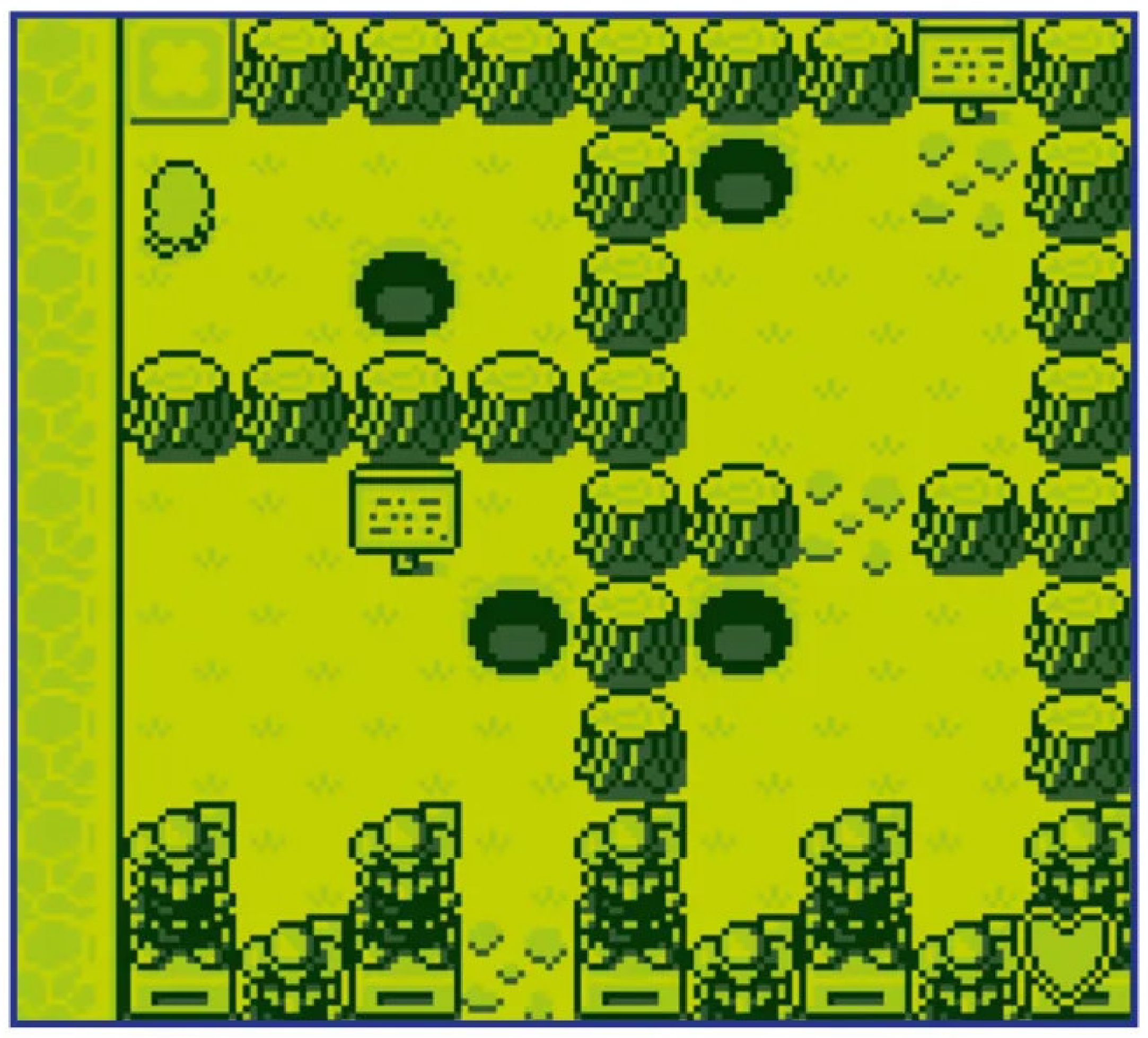
The Game Boy had a long tail, too. While the first couple of years played host to more major hits than later years, the hardware saw at least a few games hit the 1 million sales mark every single year. That's pretty remarkable, as Game Boy owners didn't buy a lot of games. Nintendo's figures show that just 4.22 pieces of software were sold for every piece of Game Boy/Game Boy Color hardware – a low number compared to the 8.07 games sold for each NES, or the 7.72 games for each SNES console. It didn't hurt that the system had a late hit in the form of *Pokémon Red & Blue* – the games gave the format a shot in the arm in Japan when introduced in 1996, and plenty of hand-me-down systems were dusted off when they made their way west in 1998 and 1999.

In the financial year ending March 1998, the Game Boy was old hardware (the Game Boy Color still having yet to be introduced) and the world was fixated on home consoles with 3D graphics. But even at what should have been its lowest ebb, the low cost and timeless library of the Game Boy, combined with the absence of any serious competition in the handheld console space, meant that Nintendo managed to sell through 10.37 million hardware units. The Game Boy Color was introduced just months later and revitalised hardware sales – and even though that model saw plenty of exclusive software, major releases including *Pokémon Gold & Silver* and *Dragon Warrior Monsters* still supported the old model. Only when the Game Boy Advance was released in 2001 did the classic system truly ride off into the glorious greyscale sunset.

That level of reach alone gives Game Boy nostalgia a much wider resonance than most other machines can claim. But there's something ▶



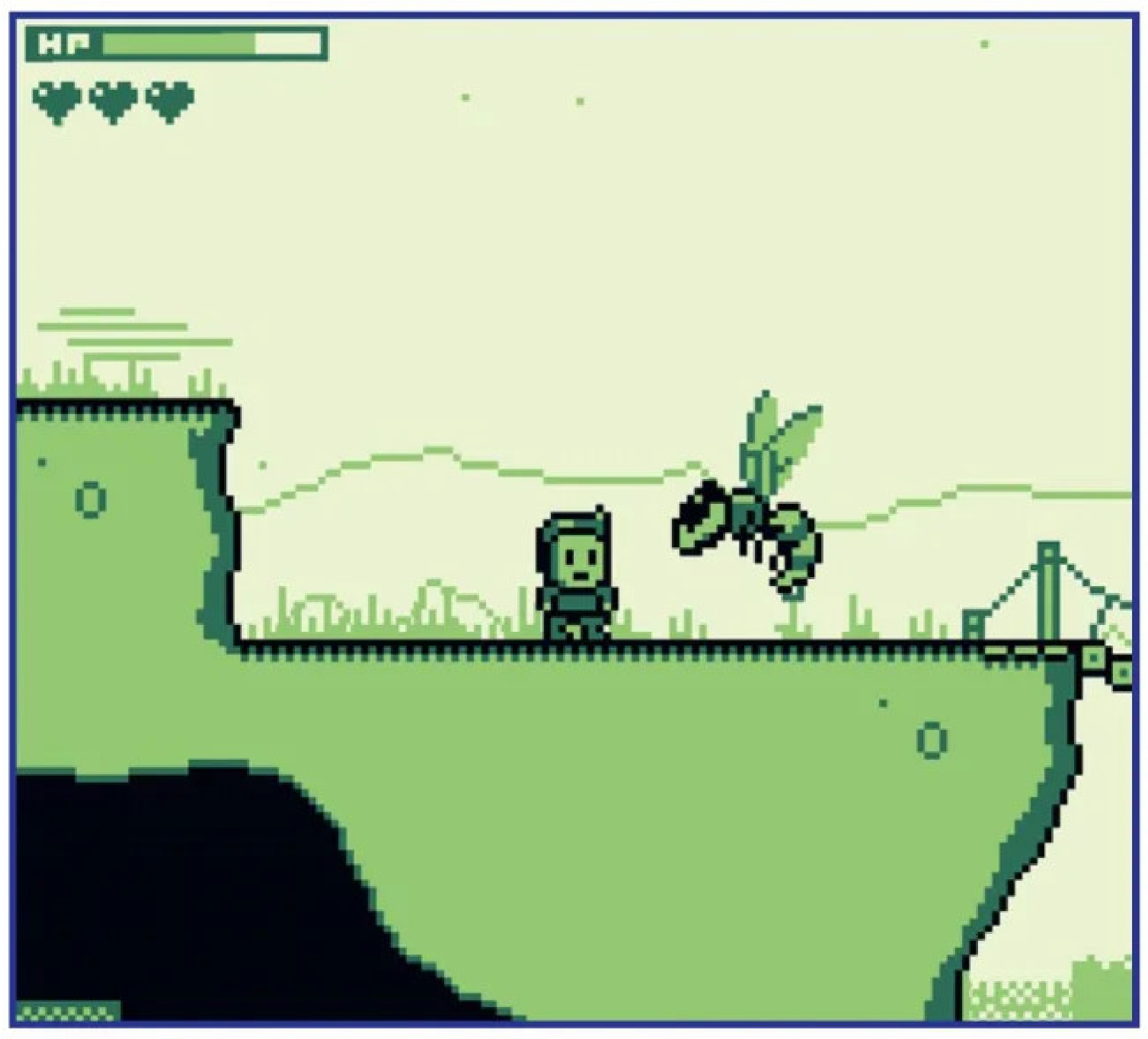
» [Game Boy] Bespoke Game Boy projects like *F-1 Race* sold in their millions, despite generic branding.



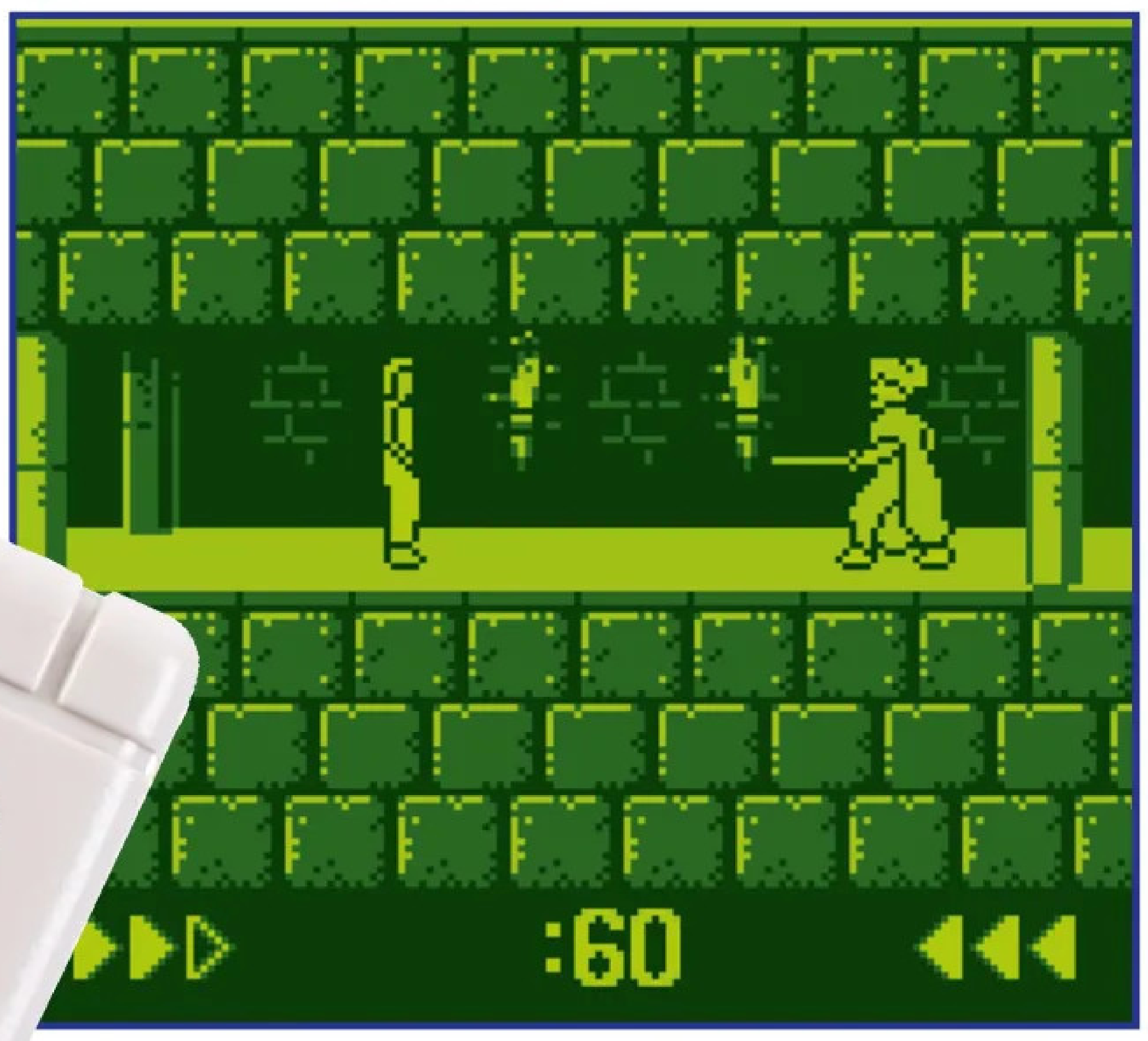
» [Game Boy] Games produced by Shigeru Miyamoto don't tend to fly under the radar, but *Mole Mania* has.

BULBASAUR
:L5
HP:
SQUIRTLE
:L5
HP:
17/ 20
OFF-ON
DOT MATRIX WITH STEREO SOUND
BATTERY
SCORE
377
LEVEL
6
LINES
1
Nintendo GAME BOY™
SELECT
START
B
PHONES

» [Game Boy] *Pokémon* kept the system from flagging when most machines would run out of steam.

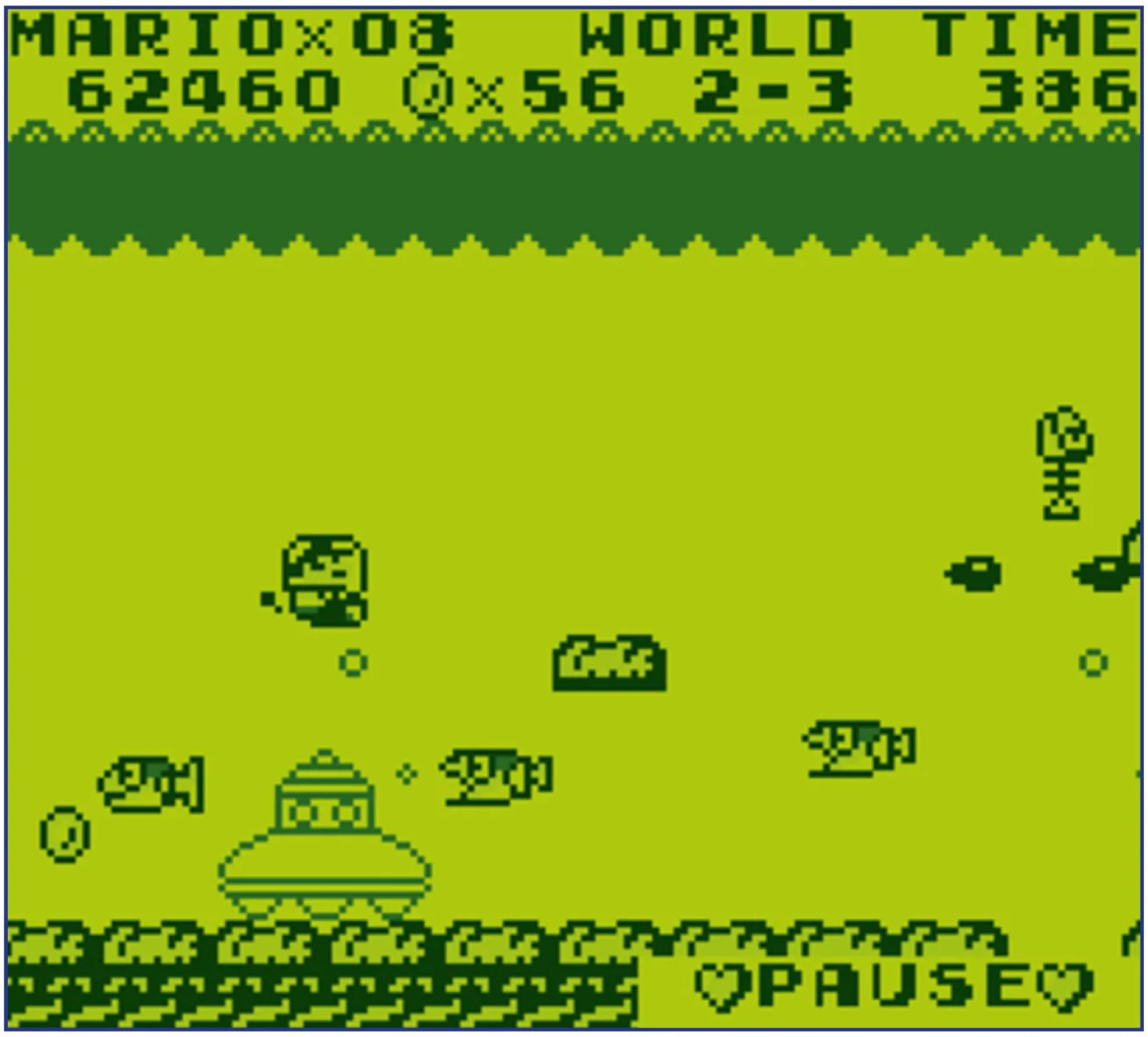


» [PC] *Owyn's Adventure* was born from an organised effort to make Game Boy-style games.



▶ more to it – the hardware choices Nintendo made gave the Game Boy a very distinctive identity, a look and feel that its competitors can't match. Show most people a screenshot of *Lemmings* on the Atari Lynx or the Game Gear, and they'd be hard-pressed to identify the platform. But when you show people a screenshot of the same game running on the Game Boy, there's no hesitation – the four shades (green if you're original, grey otherwise) are a defining characteristic of the platform. And the Game Boy sounds unique amongst Nintendo systems too, not inheriting its sound hardware from the NES or having anything in common with the SNES. Combined with its overwhelming commercial success, these unique distinguishing factors have turned the Game Boy into a true cultural icon, recognisable even to those who weren't around to experience the system's birth over 30 years ago.

Take the form factor of the system, for example. When Nintendo chose to reintroduce its *Game & Watch* classics in mini keychain size in the Nineties, it did so in Game Boy-style casing. The machine has also been the basis for all sorts of novelty products, from shampoo bottles to drinking flasks and alarm clocks. Though Nintendo would abandon the vertical orientation beginning with the Game Boy Advance, it was widely imitated by manufacturers of lower-level handhelds in the



» [Game Boy] Game Boy games often offer unique takes on existing properties, like *Super Mario Land*'s shooting sections.

> "Both the Game Boy and the Spectrum are Z80, so I already had a head start"
>
> Jas Austin

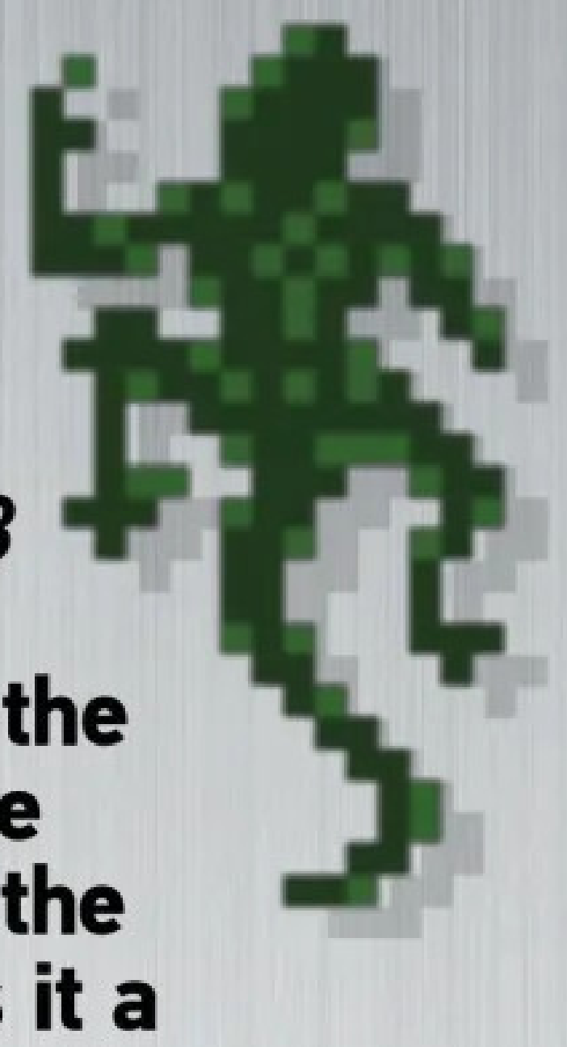
Nineties, from cheap 'block game' handhelds to the likes of the Mega Duck and the Supervision. Even today, contemporary machines such as the Playdate and Analogue Pocket draw clear inspiration from the Game Boy's classic design.

The limited display of the system has also been a visual inspiration for many, including Gaz, whose game *Owyn's Adventure* uses the Game Boy visual style. What inspired this choice? "I started *Owyn's Adventure* as an entry to the Unofficial Game Boy Jam run by my friend Jamie, who convinced me to take part away from another personal project that I'd gotten a creative block on," explains the developer. If you're a regular reader of our Homebrew section, you'll likely be familiar with such development drives. "It was two weeks to make as much as you could so long as the game featured just four shades of the Game Boy green. After two weeks I had some systems in and a rushed level, so I thought I'd spend a couple of weeks working on the level design but kept going as I was enjoying working on it so much."

The existence of an unofficial jam suggests that there's no shortage of people interested in making Game Boy-style games, and a look around the indie scene bears that out. Browse the online store for the Nintendo Switch and you'll find games like *Save Me, Mr Tako* and *Awesome Pea* that lift their limited colour palettes and green hues directly from the original model of the Game Boy. It's not just on the handheld platform that you'll find this reverence for Nintendo's original machine, either – PC games like *Madcap Castle* and *Squidlit* also pay homage to the system's distinctive display, while others like *Evoland 2* and *PlataGO!* include the Game Boy as one of many retro gaming styles. The look even goes beyond games, as mobile apps like Retrospecs, Bitstagram and Retroboy offer camera filters designed to produce images like the Game Boy Camera add-on. So what makes the look of the machine so popular with indie developers? "A couple ▶

MINI MAKING OF…

ALIEN 3



JAS AUSTIN REVEALS THE STORY BEHIND HIS UNIQUE INTERPRETATION OF ALIEN 3

You worked on the Spectrum before moving over to the Game Boy. Was it a smooth transition?

Yes, it was pretty smooth. Both the Game Boy and the Spectrum are Z80, so I already had a head start. What was new to me was hardware support – scrolling and sprites for example.

Were you able to watch the *Alien 3* movie prior to starting development?

Sadly no, but the team did get to attend a private screening in a small cinema in Leicester Square shortly before the film was released, which was pretty exciting for me. For the design, we only had a copy of the script.

There must have been a temptation to do a typical 2D run-and-gun, like the other versions of the game?

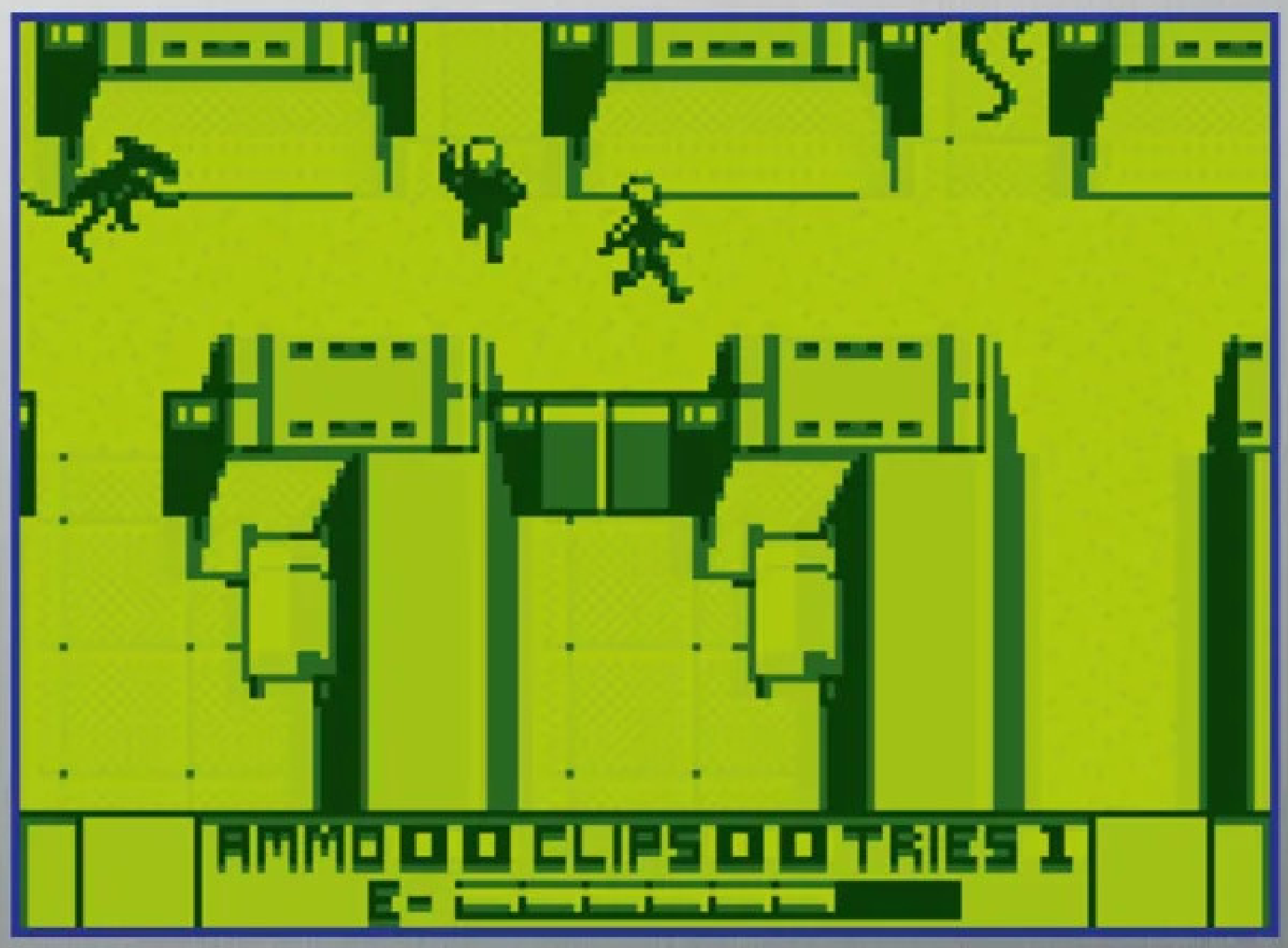
A side-view game was the obvious choice but we purposely avoided doing that. My last few games had all been side-scrollers and I was a bit sick of doing them, so I pushed for the idea of doing something top-down with a little less straight action. Plus, at the time, I had a feeling the other versions of *Alien 3* would be side-scrolling actions games and thought this would help our game stand out.

Did you receive any feedback – or interference – from the movie studio?

Fox had no feedback or input into the game design, I'm not sure back then that the film companies saw the games industry as anything important. However any larger graphics of the actors had to be signed off by Fox and the stars.

How long did the development last, and was it a smooth development?

It wasn't the smoothest development. I started on the game and made a very quick prototype to demonstrate the top-down scrolling view. But then I got pulled off the project to work on another game, *Spider-Man 2* if I recall. Sadly my replacement on *Alien 3* had to stop due to health reasons, so after finishing the *Spider-Man* game I jumped back on board. The previous coder's work wasn't something I could use so I went back to my original code. Because the development was now running late the pressure was on to get it finished. It was tough but I managed to finish the coding in about five weeks, which even back then was pretty quick.



reasons as to why the Game Boy aesthetic is popular come to mind," says Gaz. "Firstly the instant nostalgia back to when we were younger – fun, easy-to-learn games. Secondly, for me especially, it lets you worry less when drawing the artwork. It takes a bit to get into the mindset of four colours but once you draw with them for a bit you learn to know when you've done enough." There are limitations, of course. "You can't go overly detailed or things just appear noisy and unreadable, less becomes more as players fill in the gaps."

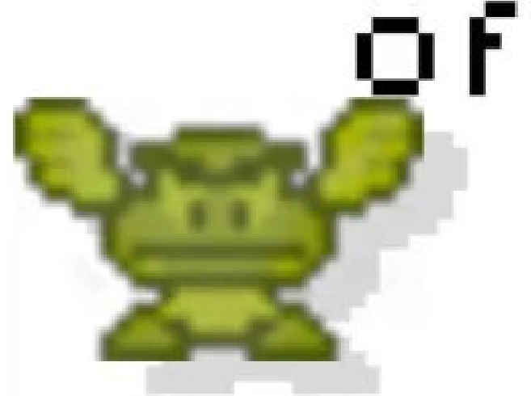
As well as the four shades, many developers choose to employ the green screen – this is in spite of the fact that many players will have experienced Game Boy games on other systems that represent the system's graphics differently. Indeed, even this magazine uses the green look for its Game Boy screenshots. Why is this such a crucial part of the look? For Gaz, it comes down to simple nostalgia. "The green is what people who have played on the original console think of when they hear 'Game Boy'. I've seen some great games with four shades but green represents the original console for me." Of course, one of the things that comes with imitating the style is that you can cherry pick the best bits of it, and one thing that tends to be left out is the motion blur that was characteristic of the early Game Boy systems. "I think developers don't chase the motion blur effect as it's not an aesthetic that lends itself to all gameplay types," explains Gaz. "A player who never used the console might even think it was a bug or glitch!"

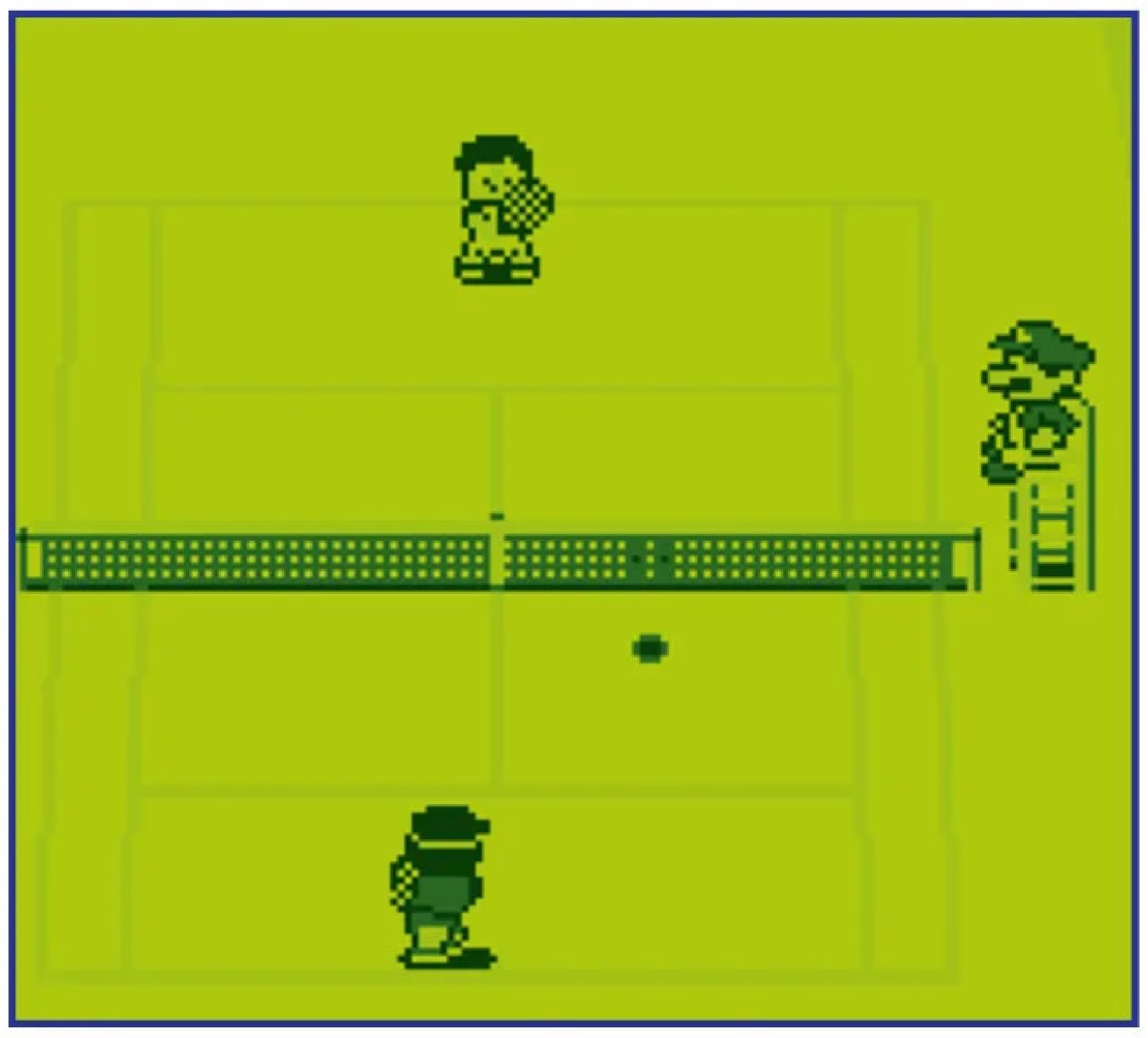
As you'll likely remember if you were around at the time, the sound of the console was popular too. In 1992, two of the Game Boy's flagship titles inspired singles that reached the top ten in the UK singles charts – *SuperMarioLand ft MC Mario* by Ambassadors Of Funk, and *Tetris* by Doctor Spin (in actuality, musical theatre composer Andrew Lloyd Webber and record producer Nigel Wright). British readers will also likely remember an Ariston advert which featured the title music from the Game Boy conversion of *RoboCop*. Those achievements are pretty astonishing, considering that the console's sound capabilities were very limited even by gaming standards at the time, and speak more to the system's massive popularity than its musical merits.

But the Game Boy's sound remains iconic way past the system's commercial heyday. With the rise of flashcarts, anyone can use homebrew programs like Nanoloop and LSDJ (Little Sound DJ) to turn their childhood handheld into a powerful instrument. But why create LSDJ in the first place? "The stars were aligned," says Johan. "I had put my heart into making music on the Amiga for a couple of years and was looking for something new. For a long time I had imagined a portable music-making tool, that would allow me to try out and annotate music ideas on the go." The choice of platform was more coincidental than deliberate. "Some of my friends were starting with Game Boy Color programming, I thought it seemed fun and assembly programming might even be a useful skill when looking for jobs. The Game Boy music programs at the time seemed rather limited and I thought making the best Game Boy music program could be my humble claim to fame – not that I imagined many would ever use it."

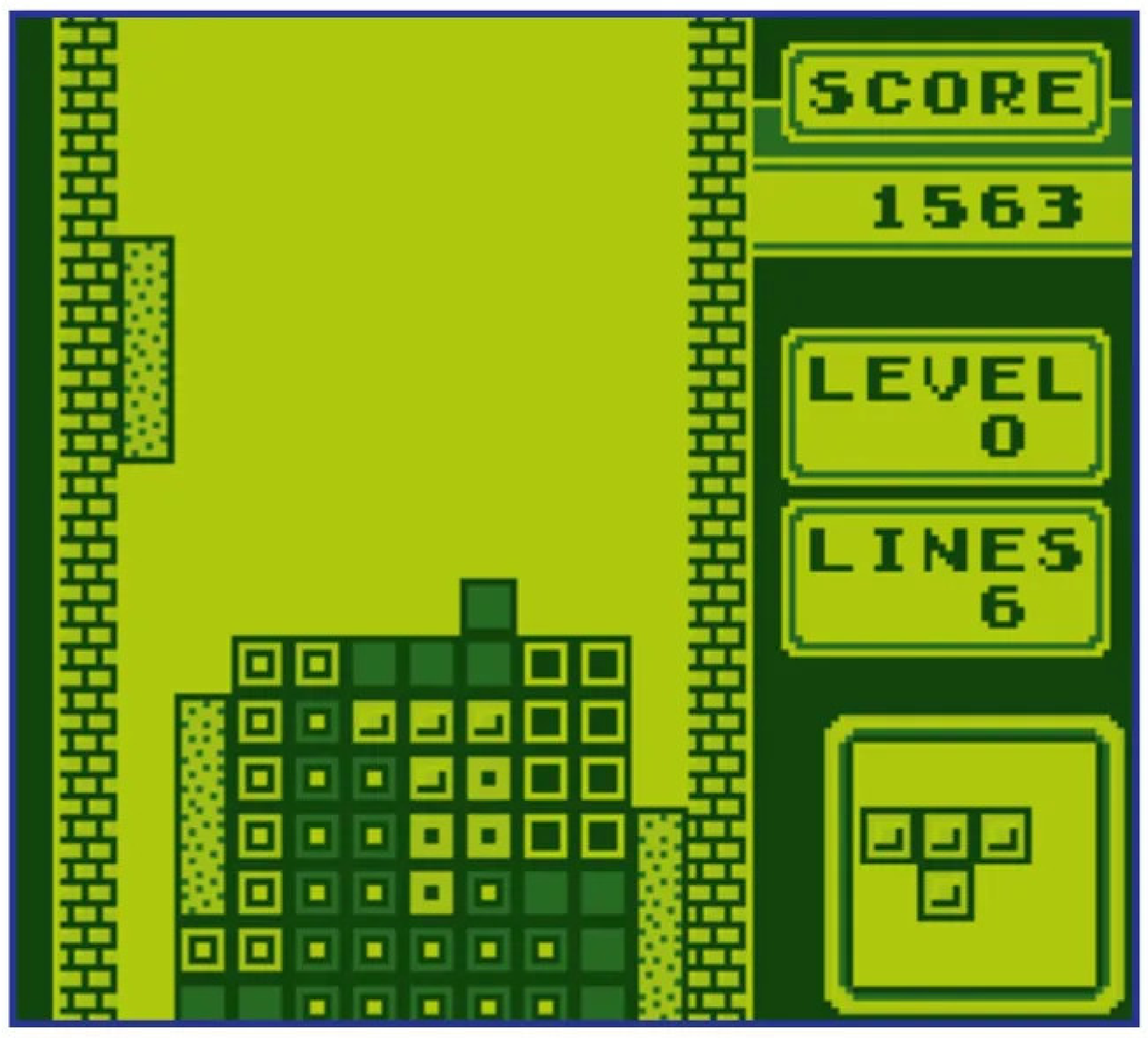
Johan's software did become rather popular, as chiptune artists have adopted the Game Boy as a favourite platform. What is it about the system that makes it so attractive? "The Game Boy sound is technically not that extraordinary and is maybe best characterised by its limited 4-bit dynamics. Time has shown though, that it is a rather good music system," he says.

> "The green is what people who have played on the original console think of when they hear 'Game Boy'"
>
> Gaz Thomas

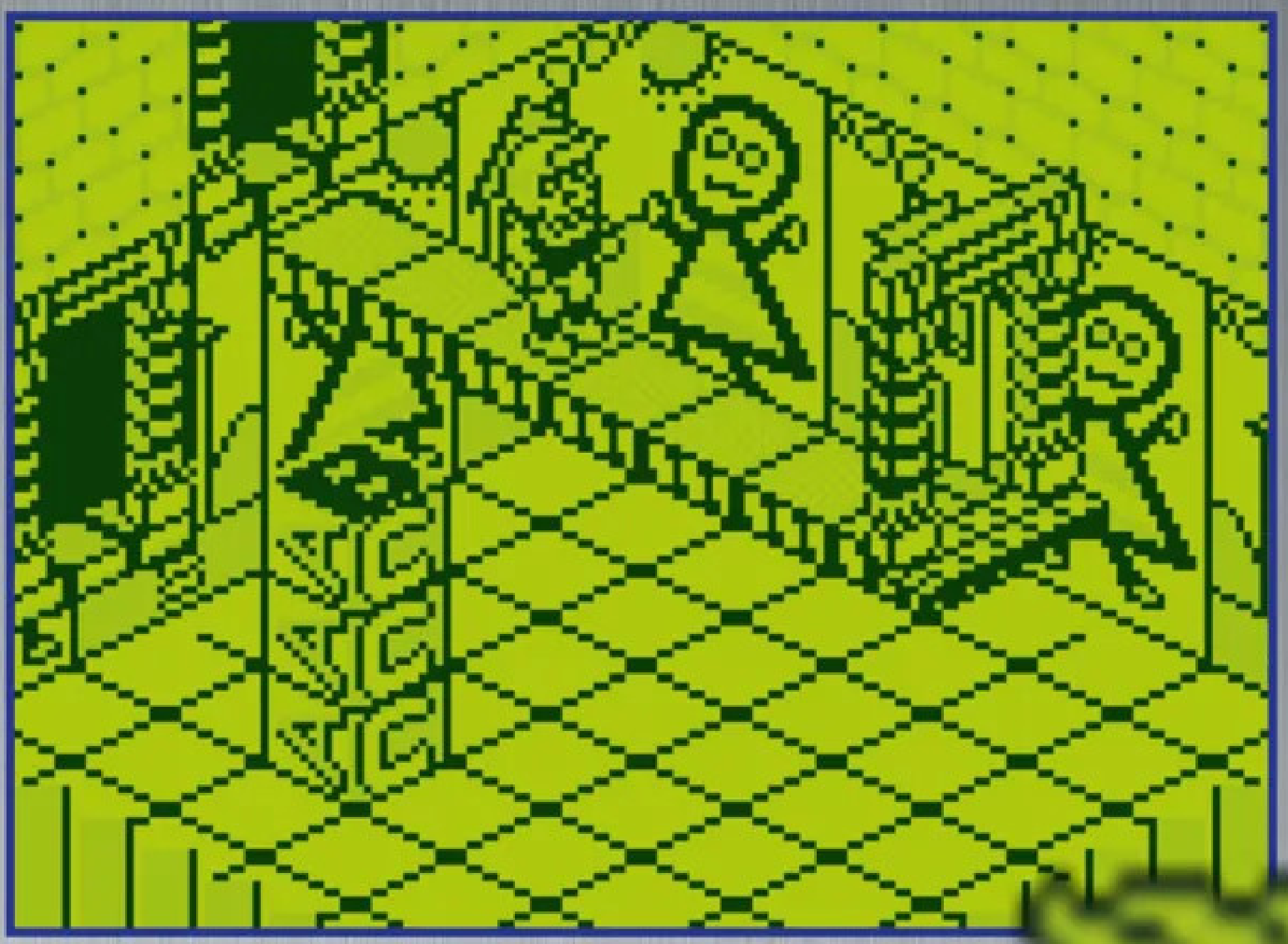


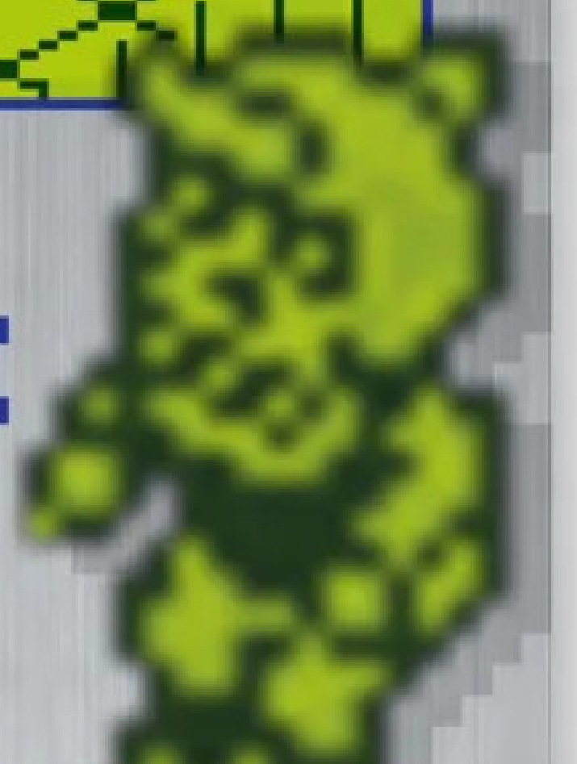


» [Game Boy] Mario often turned up to boost the appeal of early games with generic branding, like *Tennis*.



» [Game Boy] The music of *Tetris* has inspired a number of musical tributes, including a top ten single.





MINI MAKING OF...

MONSTER MAX

JON RITMAN ON CREATING HIS MINI ISOMETRIC OPUS FOR THE GAME BOY

Did you find it easy moving on to Game Boy development, due to the Z80-like CPU?

Z80-like? Yeah, if they had castrated a Z80. No exchange registers, no index registers, no 16-bit additions or subtraction instructions. It was doable but also horrible.

Were you asked to create an isometric game in the style of *Head Over Heels*, or was it something you wanted to do?

I had just finished my own development program that Rare used for many games, and at that point I just wanted to use it for something myself. There were no isometric games for the Game Boy during that time, so I thought it would be an interesting challenge.

The monochrome screen was probably the Game Boy's biggest shortcoming. Did you have to mitigate for it during the design?

To be honest, as far as an isometric game was concerned the Spectrum was also monochrome, so no change there. The biggest problem with the screen on the Game Boy was that there wasn't a proper hi-res mode, so I had to mess about a lot to create one using interrupts to change modes as the raster passed over the screen.

The issues you had with the publisher are well-known. Do you think the game would have had more impact if its release had been handled better?

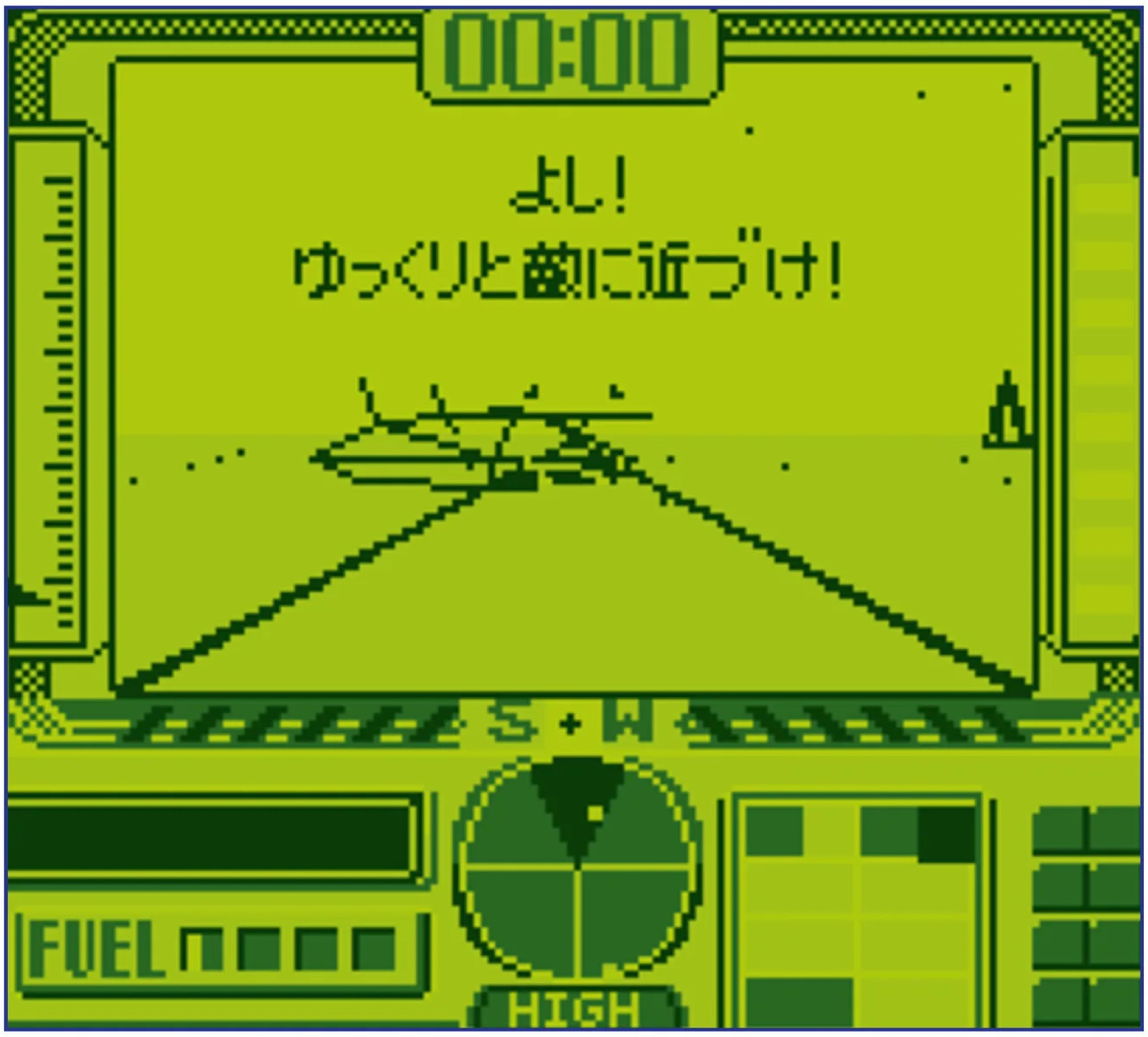
If reviews made no difference at the time why would anyone bother to submit a game? *Monster Max* got great reviews when we finished it, but how many would remember it when it was eventually released nearly a year later?

Is it correct that Nintendo was interesting in publishing the game at one point?

Don't remind me that I made the biggest mistake of my career. Yes, Nintendo was interested but we would have had to remodel the main character to be one from the Nintendo stable. I can only plead tiredness for my failure to do so.

Finally, was a Game Boy version of *Match Day* ever considered?

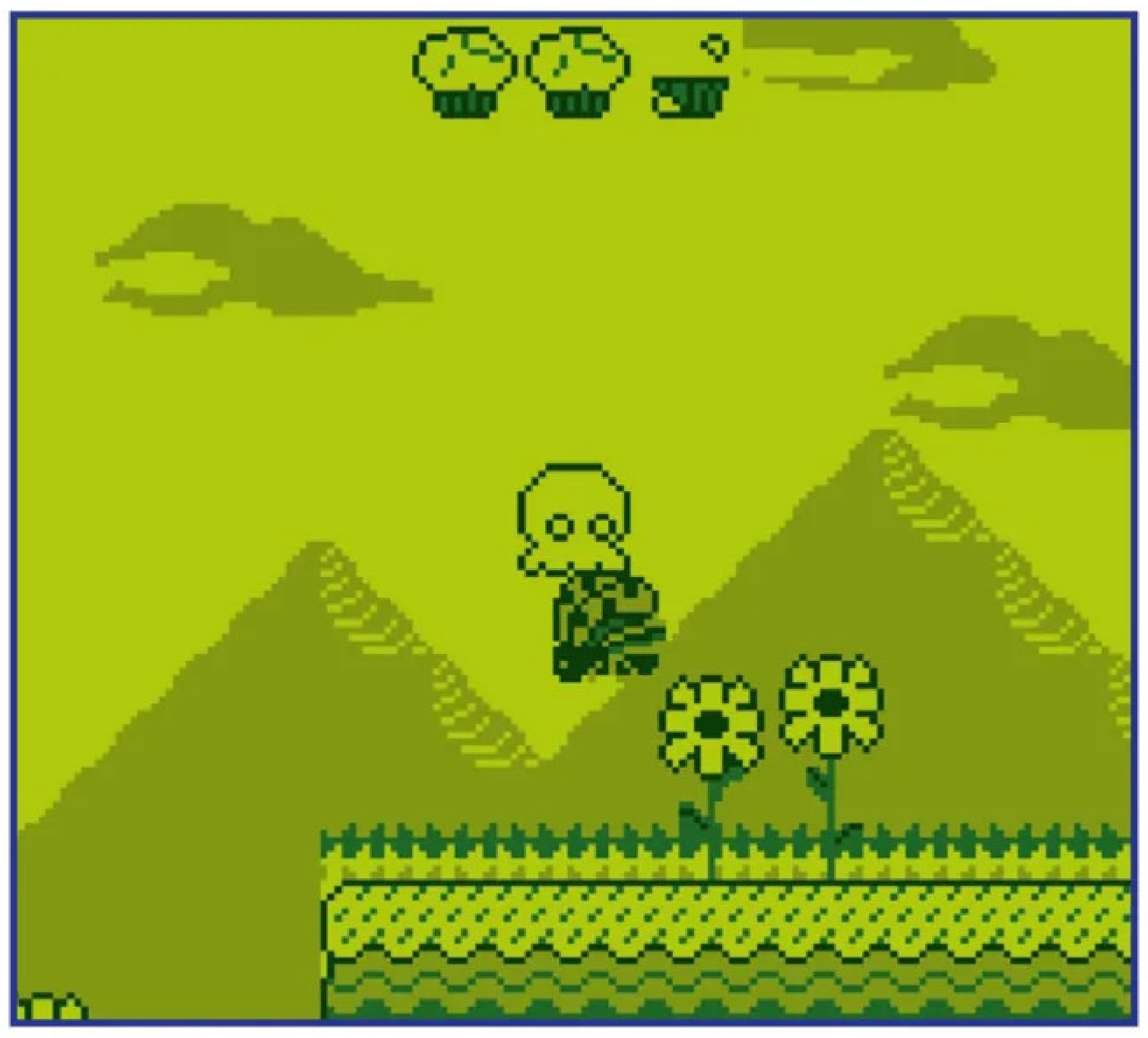
I didn't think it would be possible to make a football game that I would be happy with on the Game Boy. I did think about it, but only for a very short time.


00:00
よし！
ゆっくりと敵に近づけ！
S W
FUEL
HIGH

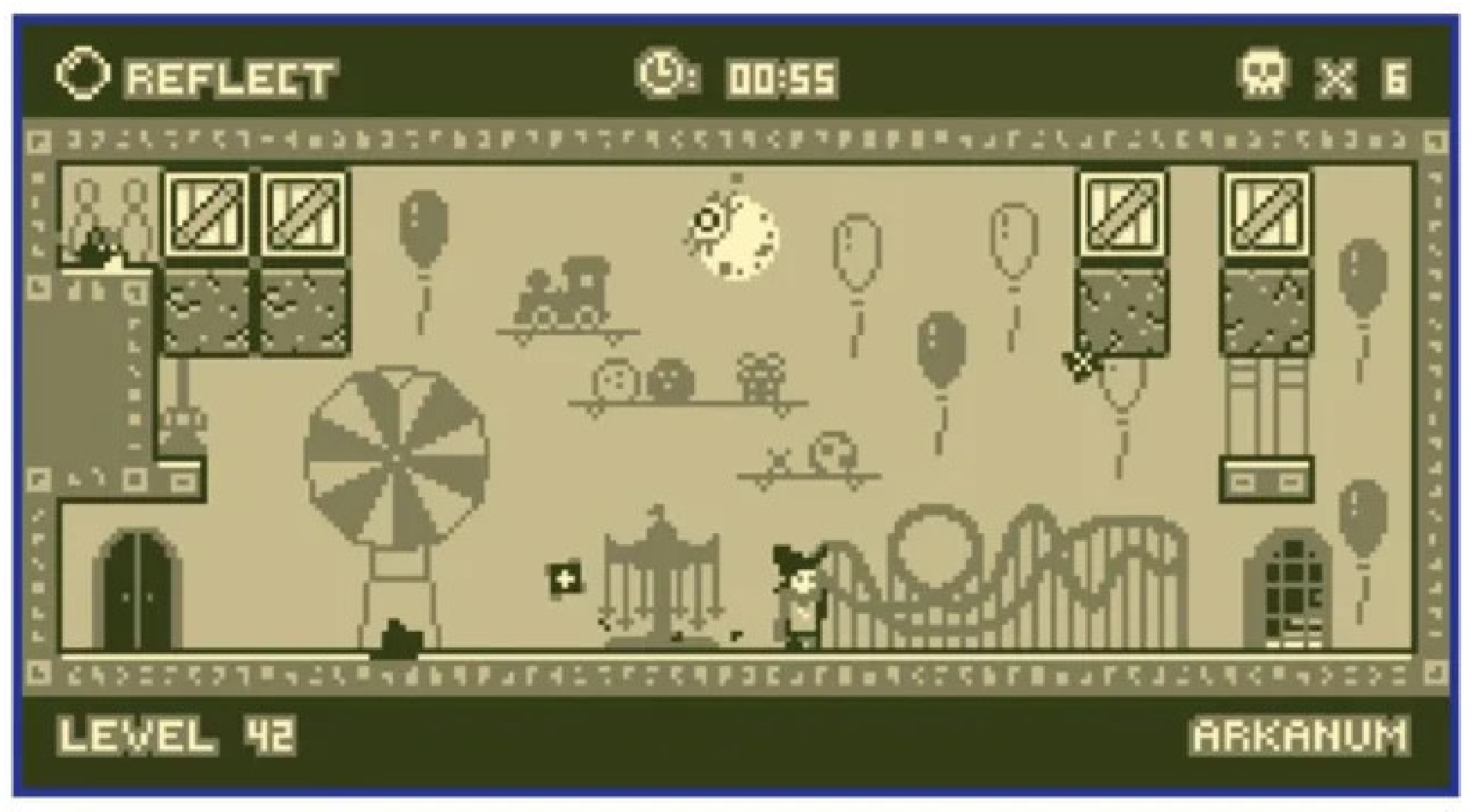
» [Game Boy] Games like *X* proved that the a little programming wizardry could overcome the hardware's limits.

BEST: 61:33
TIME 27:13

» [PC] Chipzel's Game Boy tunes were the soundtrack to indie hit *Super Hexagon*.



» [PC] *Squidlit* goes further than other Game Boy-inspired games, sticking to sprite restrictions and other limitations.


REFLECT
00:55
× 6
LEVEL 42
ARKANUM

» [PC] Various indie developers interpret the Game Boy green differently, as seen in *Madcap Castle*.

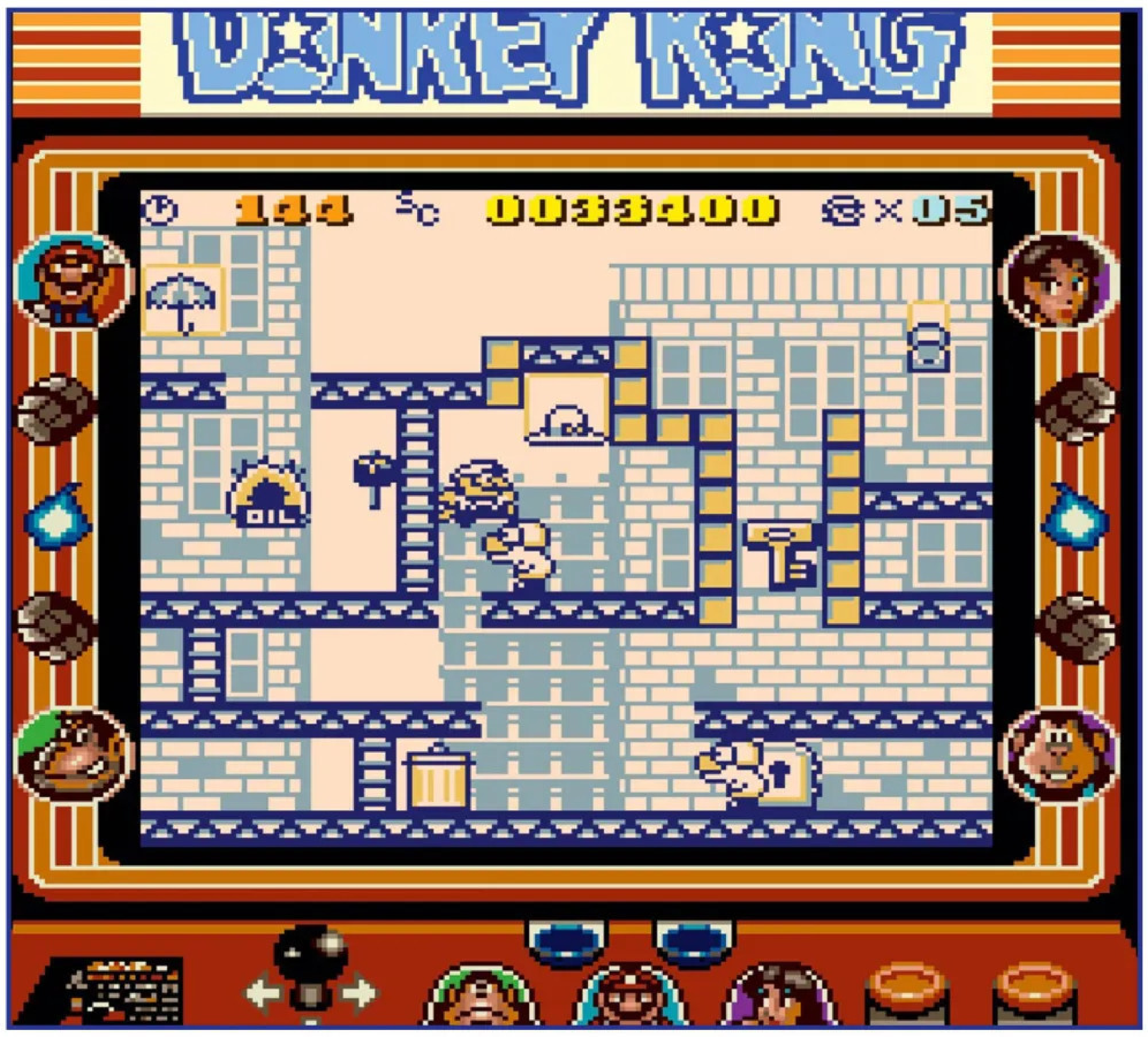
"The capabilities are well-balanced between two square wave channels, a programmable wave table and a noise generator, so it lends itself equally well to many music genres. It is easy to program and the Game Boy has ample RAM, ROM and decent processing power, so it's possible to splurge on things like nice UI, samples, soft synthesis, even going overboard with effects so that one can sculpt the sounds to ones desire. The serial port is a nice bonus, and crucially those square wave basses just happen to sound great in a big sound system."

LSDJ has gone on to become a key tool in the repertoire of many chiptune musicians – those who use it include popular acts such as Anamanaguchi, Toriena, Chipzel, DJ Scotch Egg and Trash80. "I'll mention Covox, Lo-bat and Goto80 since I did a lot of shows with them back in the day," adds Johan when asked about his favourite acts. Like the Game Boy graphical style, the Game Boy sound has even found its way back to games – Anamanaguchi did the *Scott Pilgrim* game soundtrack, Chipzel provided music for *Super Hexagon* and Toriena contributed to *Team Sonic Racing*.

But while the hardware itself has had a considerable impact on our gaming culture, the Game Boy is like every other console in that the primary draw remains the games themselves. And the library manages to attract both old hands and new faces. Jeremy's *Game Boy Works* covers the Game Boy library in chronological order, and cultural significance is a big reason for the choice of platform. "Ever since Game Boy Color and Neo-Geo Pocket Color I've been a big fan of handheld gaming, and during the DS and the PSP's lifespan, I was a big advocate of those in the press. So I felt that maybe I should go back and look at the roots of portable gaming, the first major portable system to come out – and it still has so much heritage in gaming at this point," says Jeremy. But there's another factor that makes the library attractive too, and that's the fact that despite all the nostalgia, it still represents relatively fresh ground to cover. "There's not really that much coverage of Game Boy – even now, outside of the major titles ▶

DOT MATRIX WITH STEREO SOUND
BATTERY
Nintendo GAME BOY™
PROGRAMMING MANUAL & CODEBOOK
galoob
PORTABLE
GAME GENIE
VIDEO GAME ENHANCER
For the Nintendo® Game Boy® Compact Video Game System
Unlock the power of your favourite video games!
DOUBLE DRAGON

– so it seemed like something interesting to do," he points out. "It's been a journey of discovery, which is what I really wanted to do because I missed out on Game Boy for most of its life. This is the chance for me to go back and experience the things that I didn't get to experience when they were new."



» [SNES] The Game Boy's display is part of its character, but many players enjoyed colour solutions like the Super Game Boy.

Going back and taking every release in turn has allowed Jeremy to gain insights on the system that he wouldn't necessarily have reached otherwise. "It had a lot of puzzle games, which I didn't really realise at the time," he tells us. "When I would play puzzle action games like *Adventures Of Lolo* or *Toki Tori*, I was like, 'Wow, this is really novel' and now that I've spent a lot of time with the Game Boy library, I realise that these were really common and this was a huge genre, especially in Japan on early computers." Indeed, looking at the Japanese library is a gateway into a world of games that originated on the likes of the PC-88 and FM7, and plenty of other games made similar transitions. Since consumers expected simple, easy-to-grasp games on the Game Boy, developers used the console as a means of bringing classic games back to market. Arcade games like *Mr Do!*, *Heiankyo Alien* and *Donkey Kong* were revived on Game Boy, as were computer classics such as *Lode Runner*.

The project has also allowed Jeremy to discover plenty of new favourites. "*Mercenary Force* was a great one, it's kind of like a horizontal shooter but you're controlling a team of mercenaries in feudal Japan. *The Sword Of Hope* was developed by Kemco, and Kemco made its mark on the NES by taking the ICOM *MacVenture* games and converting them, and *The Sword Of Hope* takes that framework and combines it with a *Dragon Quest*-style RPG. It's really interesting and distinct. I also like *Balloon Fight* and it didn't really occur to me until I started this project that *Balloon Kid* was a sequel and follow up to *Balloon Fight*, so I really enjoyed that one." It's fascinating that even for a long-time games journalist with a notable interest in retro games, there's so much unexplored territory. "There have been quite a few games since I've started this project that have been pleasant surprises or genuinely great. I don't think the Game Boy gets its fair due, honestly," he tells us.

One of the long-term devotees of the system is Mathew, who graduated from *Kirby* to *Super Mario Land*, and later to RPGs like *Pokémon* and

Nintendo GAME BOY™
DMG-ZL-EUR
THE LEGEND OF ZELDA LINK'S AWAKENING
Nintendo GAME BOY™
DMG-ML-UKV
SUPER MARIO LAND
THIS SIDE OUT
MADE IN JAPAN

» The Game Boy saw a lot of support from Nintendo, with big franchises making waves on the handheld console.

MINI MAKING OF...

DONKEY KONG LAND III

IAN MANDERS CODED THE THIRD AND FINEST DONKEY KONG LAND

How did you land the job of coding *Donkey Kong Land 3* for Rare?

I started at Rare in 1994 and my first project was the SNES game Ken Griffey Jr's *Winning Run*. After that finished in early 1996, I was assigned to work on *Donkey Kong Land 3*. It used the same engine that Rob Harrison wrote from the ground up for *Donkey Kong Land 2*, but with lots of new gameplay features, as well as new map screens and bonus games.

What were the main challenges you faced from a coding perspective?

It was a new platform, to me, so I had to get up to speed with a different CPU, and the tighter constraints of the Game Boy – slower speed, less memory and the small pages of the Game Boy cartridges. It was an interesting challenge, though, and the immediacy of working with portable platforms resonated with me. For most of my career since that point, I've developed software for portable games consoles and mobile phones.

The first two *Donkey Kong Land* games are quite close to their big brother SNES versions, whereas *Donkey Kong Land 3* does deviate from *Donkey Kong Country 3*. Was this a conscious decision?

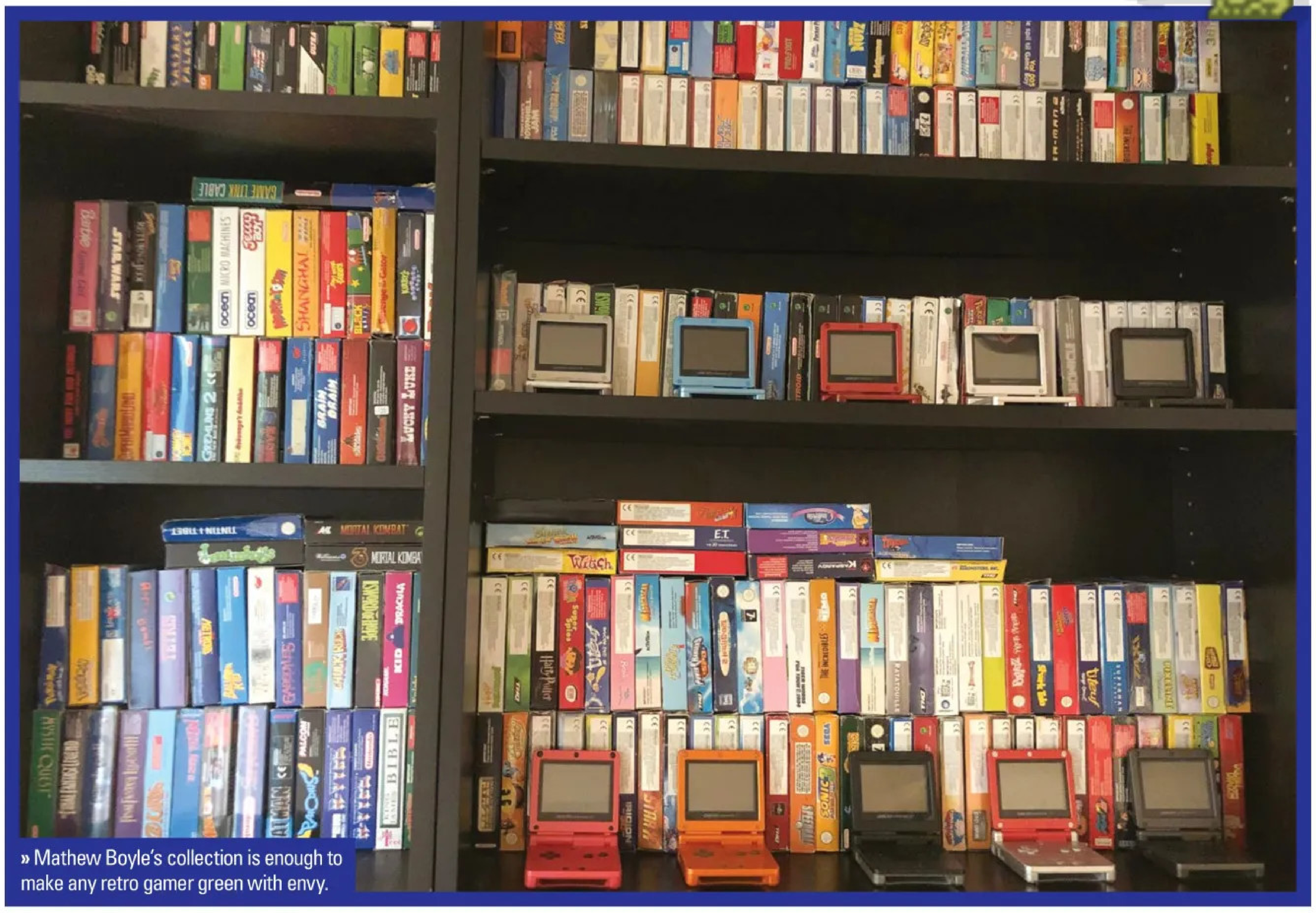
We weren't given any significant directives one way or another and we were generally left to get on with it. Most attention at that time was paid to the Nintendo 64 games in development. We had the benefit of having a good starting point in the existing engine, so that gave us some breathing room to add some original elements.

The original Game Boy's monochrome screen wasn't amazing. Was there much you could do as a coder to improve clarity?

I think that was mostly in the hands of the artist. I don't remember having much influence over that. The artist, Keri Gunn, had lots of experience with creating great Game Boy graphics so it was in capable hands.

The first *Donkey Kong Land* on Game Boy reportedly sold in huge numbers. Were you privy to how well your sequel sold?

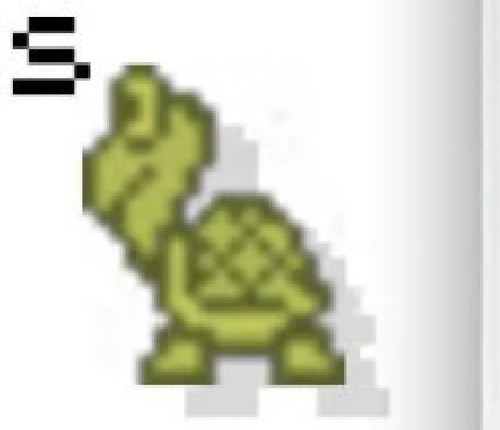
I remember hearing that *Donkey Kong Land 3* sold more than a million, which was great to hear for only the second game I'd worked on.



» Mathew Boyle's collection is enough to make any retro gamer green with envy.

"The games are very simplistic and there's a purity in that – devs couldn't rely on visuals"

Mathew Boyle

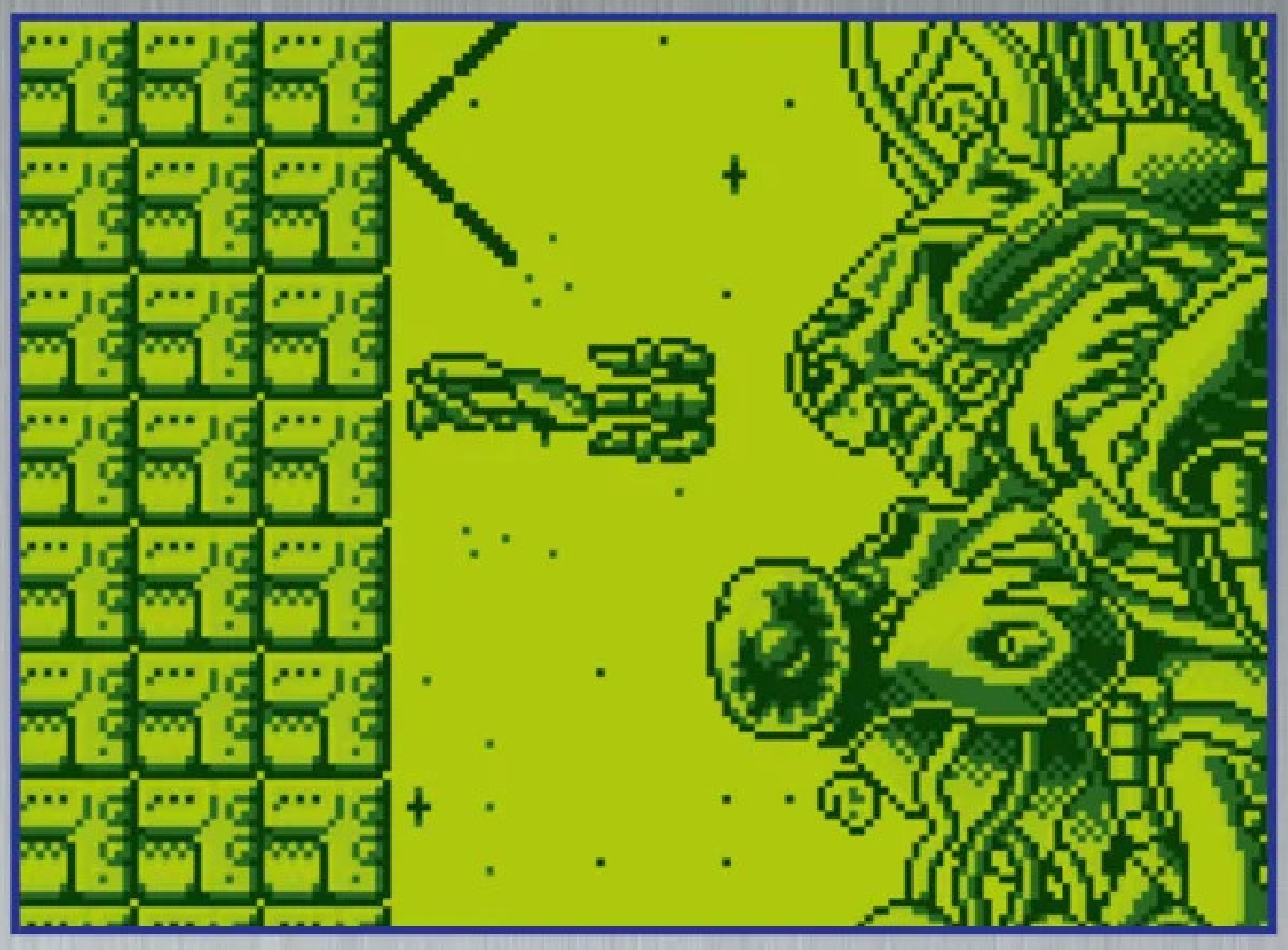


Dragon Warrior Monster. "I've been collecting for the Game Boy since I was about 11," says the collector. "I used to go to car boot sales and local retro stores with friends at the weekends. To be honest, it pretty much happened by accident – as I grew up with the system and its successors, I ended up with a pretty solid base of games and discovered new ones via emulation. I started filling in the gaps because honestly it'd stretch the money I'd get from my paper round a little more than buying a SNES game. Unboxed carts were usually only a couple of pounds, so it was worth gambling on games with interesting labels!" Eventually, this casual collecting turned into a more focused effort. "It wasn't until I moved to Denmark that I decided to go for a full set," he explains. "I managed to get the full European set a few years back (467 carts) and then I mopped up the hundred or so US exclusives last year. I think I'm somewhere around 200 of the Japanese exclusives, so I've probably nearing the 800 carts mark if I haven't already!"

So what is it that keeps players coming back to the Game Boy library? "I think it's because the system's limitations made for great gameplay. The games are very simplistic and there's a purity in that – developers couldn't rely on visuals (or even colour), so it makes the experience all about play," Mathew replies. "I guess it also helps that the Game Boy came around at a time when games were in their infancy. Much like the indie games of today, a small team could make an experimental game with relatively little risk involved. I think it's a real testament to those studios, that you can hand an [original Game Boy] and some games to a six-year-old and they'll still have fun playing them!"

The Game Boy was never Nintendo's flagship product, yet there's a case to be made that it had the biggest impact of any of the company's hardware ventures. After all, what became of the adults who got hooked on their kids' copies of *Tetris*? They're the bedrock of today's casual gaming market, and they're probably still playing *Tetris* on their mobile phones. What became of *Pokémon*? It's still the biggest entertainment franchise in the world. What became of handheld consoles? They were established as viable alternatives to home devices, and Nintendo has been the driving force in their evolution. The company enjoys a similarly commanding position in that market now – even though the Game Boy line has been inactive for over a decade, the Nintendo DS line went on to even greater sales and the Switch is more or less unopposed today.

Because of that impact, we're still in love with the system today. You can see that in the people who still cherish the collections they amassed when growing up, as well as those who are discovering the library today. You see it in the Game Boy kids that have grown up and are now bringing the console's distinct style into their own projects – a style that exists purely because of the choices Nintendo made in service of creating a viable handheld console. If there's a lesson to be learned, it's that the best hardware will turn heads in the moment, but the best hardware for the job will create a lasting legacy. ✱



» [Game Boy] The Game Boy editions of *R-Type* are impressive, and well worth picking up.

MINI MAKING OF...

R-TYPE DX

BOB PAPE RECALLS THE BUMPER R-TYPE PACKAGE THAT DELIGHTED ALL GAME BOY OWNERS

Did having the ZX Spectrum version of *R-Type* on your CV help you get the Game Boy *R-Type II* gig?

Well the original *R-Type* for the Game Boy was converted by Jas Austin but he was busy on another game, while I was free and had the experience of coding the Spectrum version. I don't know if it had been offered to anyone else, but for my self-confidence I'd like to think my name was somewhere near the top of the list!

The pair of you later updated your *R-Type* games for *R-Type DX* on the Game Boy Color. What was the impetus there?

It was a quick money-spinner. The *DX* versions replaced the mono sprites and backgrounds with colour versions and I also added a brand-new backdrop to the third stage of *R-Type II*. We found out that it was very easy to convert an existing four-colour Game Boy game to a full(ish) colour one, so much so that perhaps the console should have been called the Game Boy Color-ised.

Besides the colour versions, *R-Type DX* also included the original mono games that could be enjoyed on both Game Boy and Game Boy Color. How did that work?

I had to add a piece of code to the mono Game Boy versions that checked if it was running on a Game Boy Color. If it was, then it set the first four colours of the Game Boy Color palette to an approximation of the Game Boy, with a slight yellow tinge. Disregarding the differences in colour, the Game Boy Color versions are pretty much identical to the originals. Nintendo did ask for some minor tweaks, such as asking for the level one boss to be made harder to kill.

***R-Type DX* includes a cryptic message on the end credits: 'For Arch Stanton, The World Is Yours?' Was this down to you?**

Yes, that's another of my little messages at the end. Arch Stanton plays a key part in the finale of *The Good, The Bad And The Ugly*, while 'The World Is Yours' is the motif that drives the protagonists of both versions of *Scarface*.

Tetris

SO SIMPLE, EVEN I CAN PLAY IT

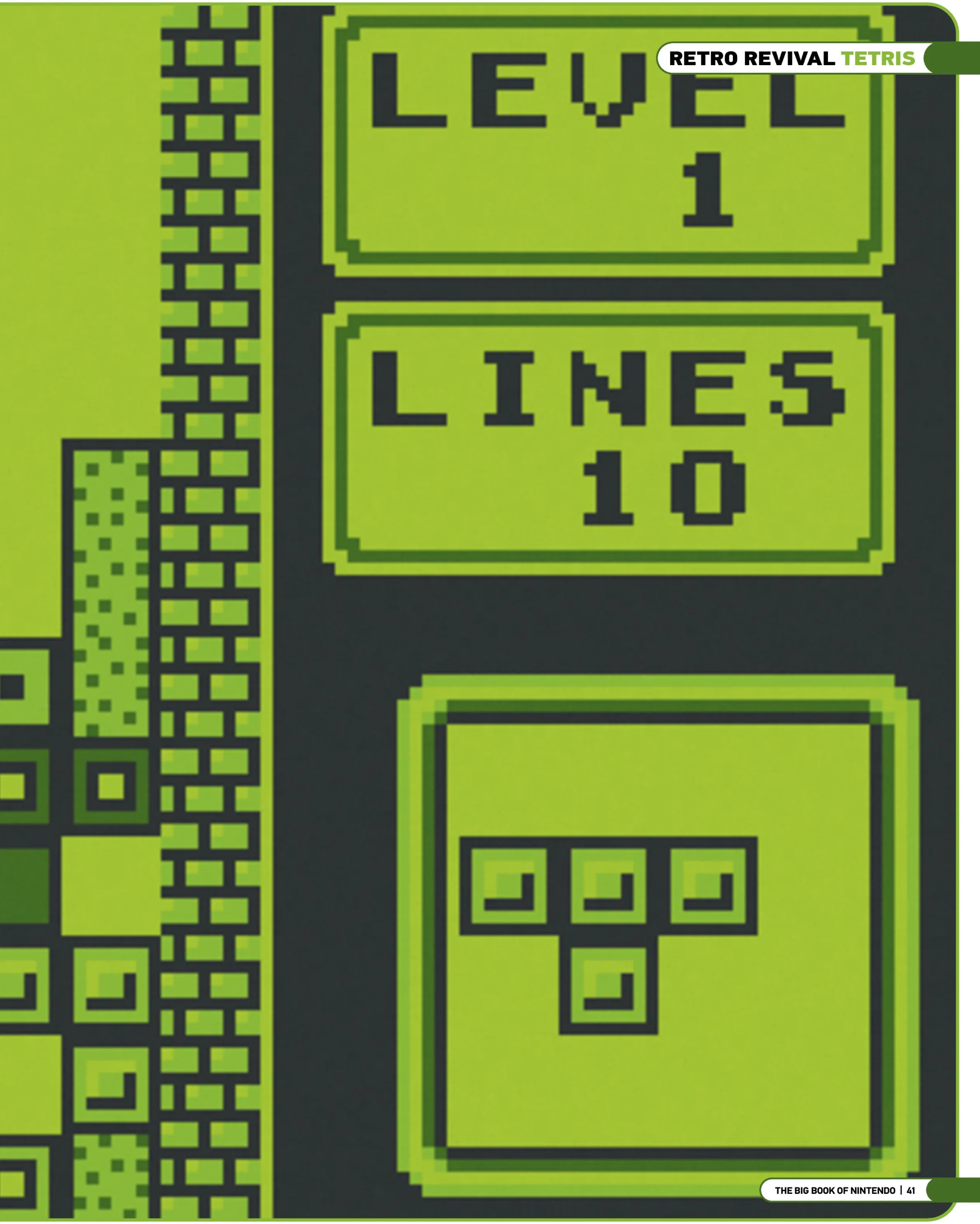
» RETROREVIVAL

» VARIOUS » 1984 » ALEXEY PAJITNOV

It's hard to come up with a single defining game that sums up the Eighties, but for me, it's got to be Alexey Pajitnov's *Tetris*. Sure, I could have gone with the likes of *Elite*, *Donkey Kong*, *Manic Miner* or countless other gems, but *Tetris* feels special, *Tetris* is a survivor.

I won't bore you with my first memory of *Tetris* as I covered that in issue 183's editorial, but it's probably worth highlighting why I think *Tetris* is such an important title. Like the very best games, *Tetris* shines thanks to its clever game mechanics that link together as satisfyingly as the walls you clear in the game. The concept of *Tetris* is easily explained and can be played by just about anyone, regardless of age or interest in videogames. Even my nan could enjoy *Tetris* on the Game Boy, and the purity of its design and simplistic-looking style has meant that many, many systems have been able to accommodate it without losing the essence of its appeal. *Tetris* has appeared on countless machines over the years, from the Electronika 60 to the ZX Spectrum, Game Boy, Amiga and numerous others, and very few of these conversions are actually poor.

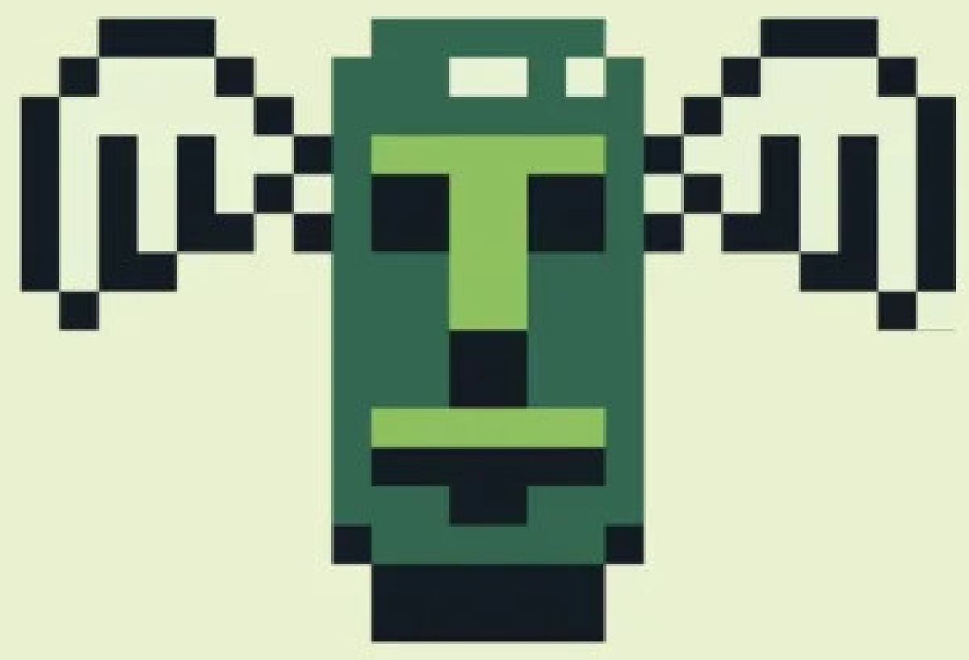
Aside from seemingly endless ports, another reason why *Tetris* has ingrained itself so much into popular culture is because the game is constantly able to reinvent itself whilst staying true to the essence of what makes the game so enjoyable. Sure there have been misfires along the way (*Hatris* and *Welltris*, I'm looking at you) but for the most part, you can typically enjoy any version of *Tetris* you pick up because the base mechanics are so profoundly gratifying. *Tetris* DS fused multiple game modes with classic Nintendo characters, Sega realised that combining *Tetris* with *Puyo Puyo* was a match made in heaven, while *Tetris 99* has proven that the battle royale arena does not just belong to *Fortnite*. Hell, *Tetris* even works in VR. It's astonishing to think that over 30 years after I first encountered it Alexey's game is still managing to surprise me. ✱


LEVEL
1
LINES
10

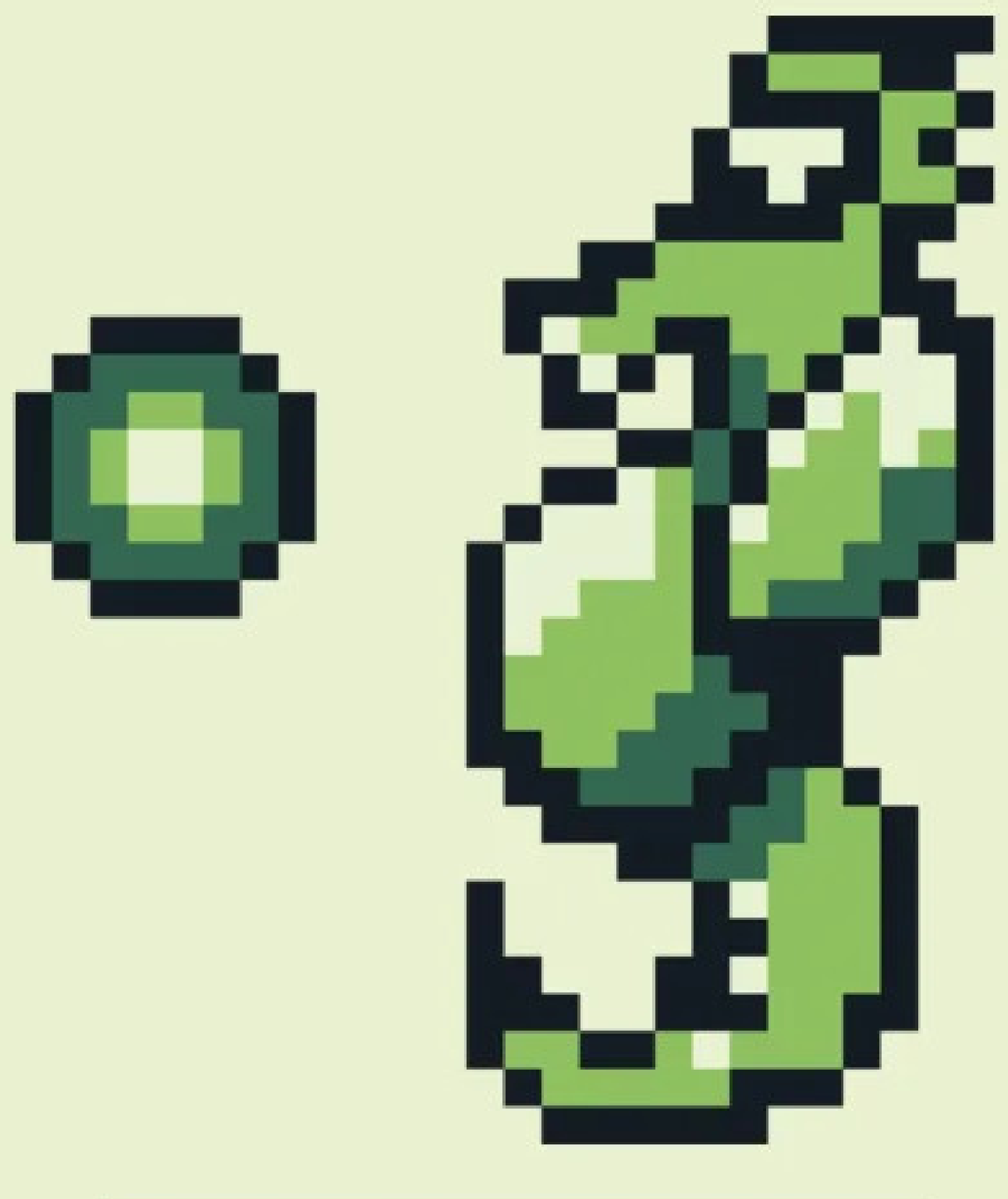
SUPER MARIO LAND

SUPER MARIO LAND HAS ATTRACTED A REPUTATION OVER THE YEARS FOR BEING WEIRD AND OFF-KILTER. RETRO GAMER ARGUES THAT THE ONLY UNUSUAL THING ABOUT MARIO'S SMALL BUT MIGHTY HANDHELD ADVENTURE IS THAT IT'S UNBELIEVABLY GOOD

WORDS BY MARTYN CARROLL



BATADON



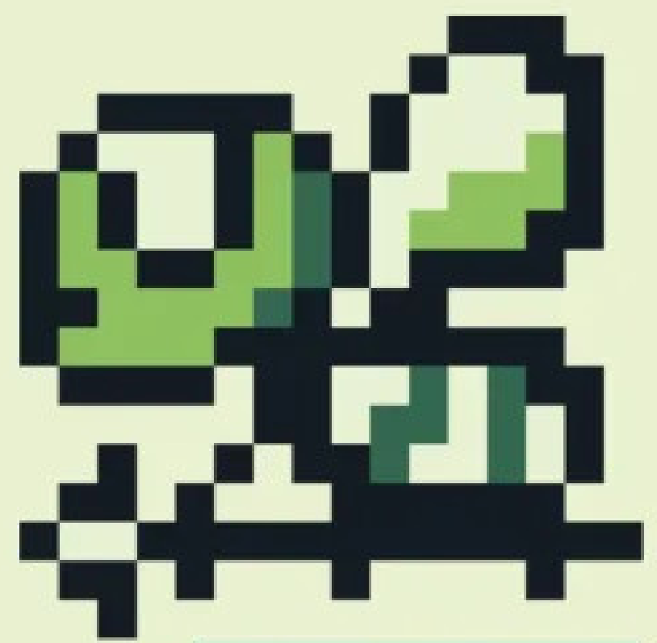
DRAGONZAMASU

The story goes that distant Sarasaland had been invaded by the evil alien Tatanga who has cast a spell over the populace and kidnapped their princess, Daisy. Mario gets wind of this wickedness and sets off to save the day, bolstered by his two armoured vehicles: the submersible Marine Pop and the airborne Sky Pop. Hold up. Sarasaland and not the Mushroom Kingdom? Tatanga not Bowser? Daisy not Peach? And *vehicles*?

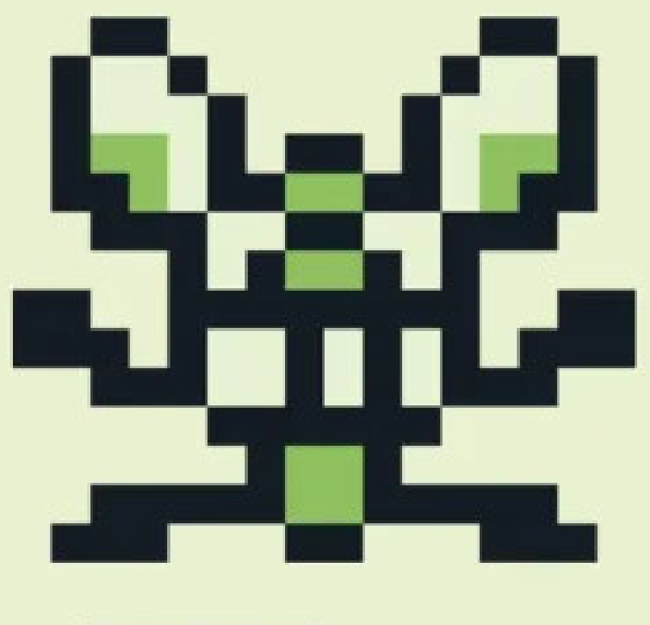
The story behind *that* story goes that Nintendo president Hiroshi Yamauchi wanted a new *Mario* game to launch alongside the Game Boy in 1989, but as series creator Shigeru Miyamoto was busy producing games for the upcoming SNES console (including *F-Zero* and the next mainline *Mario* game), the task was entrusted to Miyamoto's mentor Gunpei Yokoi. This made perfect sense as Yokoi and his Nintendo R&D1 team developed the Game Boy, making them the ideal people to shrink *Super Mario Bros* and make it work on the handheld's tiny 2.6-inch screen. And so, without Miyamoto's involvement, Yokoi and director Satoru Okada cooked up a miniaturised version that resembled the NES original in most ways but introduced enough new elements to delight – and potentially irritate – *Mario* fans.

One noticeable change is the new setting. There are only 12 stages, but they are split over four separate 'kingdoms' which feature distinct themes. The opening Egyptian-inspired kingdom is not too far removed from Mario's usual stomping ground, but beyond this lies unfamiliar, almost alien environments inspired by Bermuda, Easter Island and ancient China. The enemies change too. Some, such as the Goomba-like Chibibo and those perennial Piranha Plants appear everywhere, but many of the others (which you can see dotted around this feature) are unique to their kingdoms and indeed, this Mario game. Each kingdom also has its very own boss to battle, which makes a nice change from the usual Bowser clones. In Sarasaland, Mario is a long way from home and it certainly feels that way.

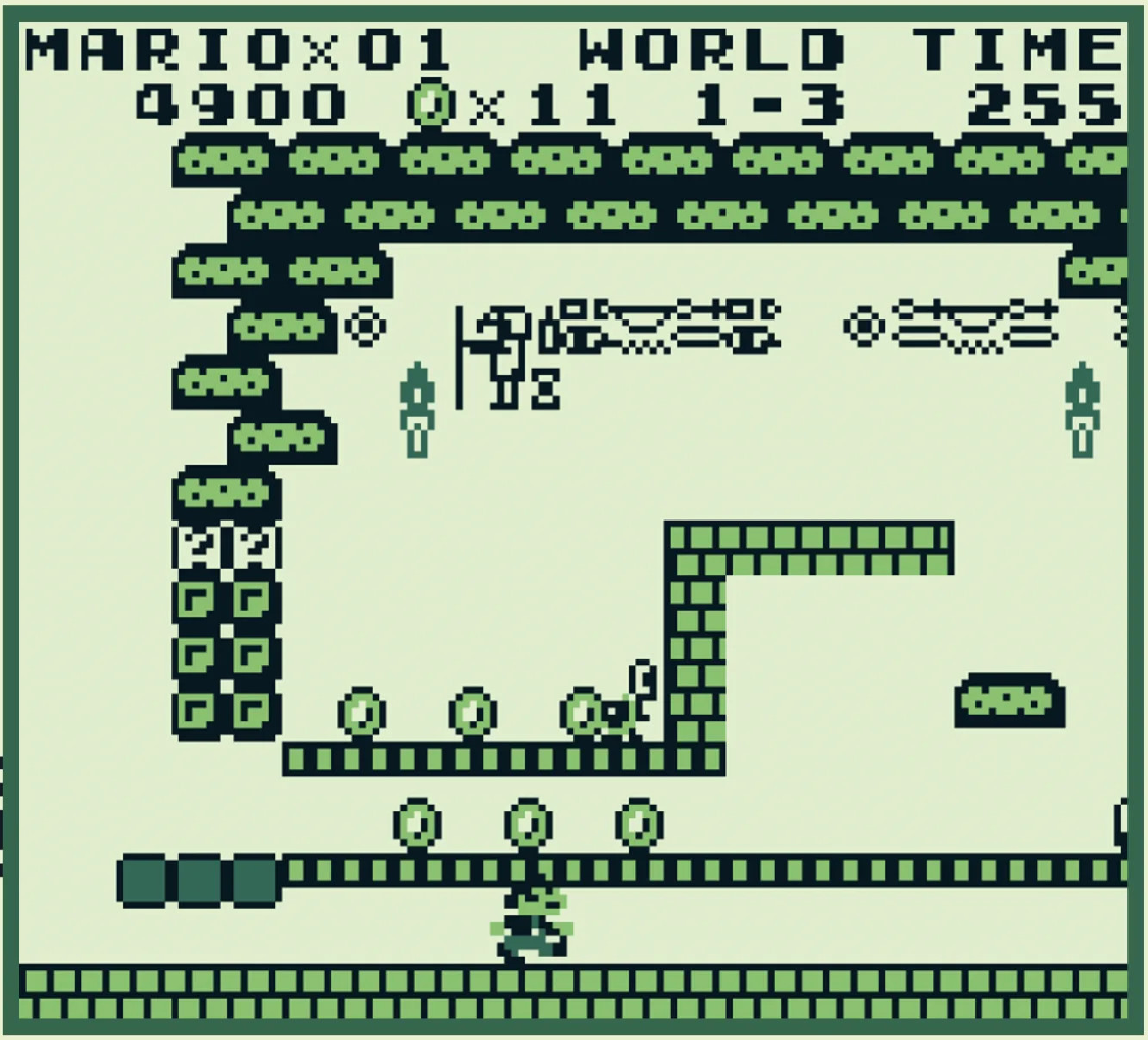
The actual gameplay is largely unchanged. Mushrooms make Mario bigger, Stars provide temporary invincibility, and the Flower power-up lets Mario shoot (although not fireballs – here he shoots Superballs which bounce off walls and floors, allowing you to perform some nifty trick ▶



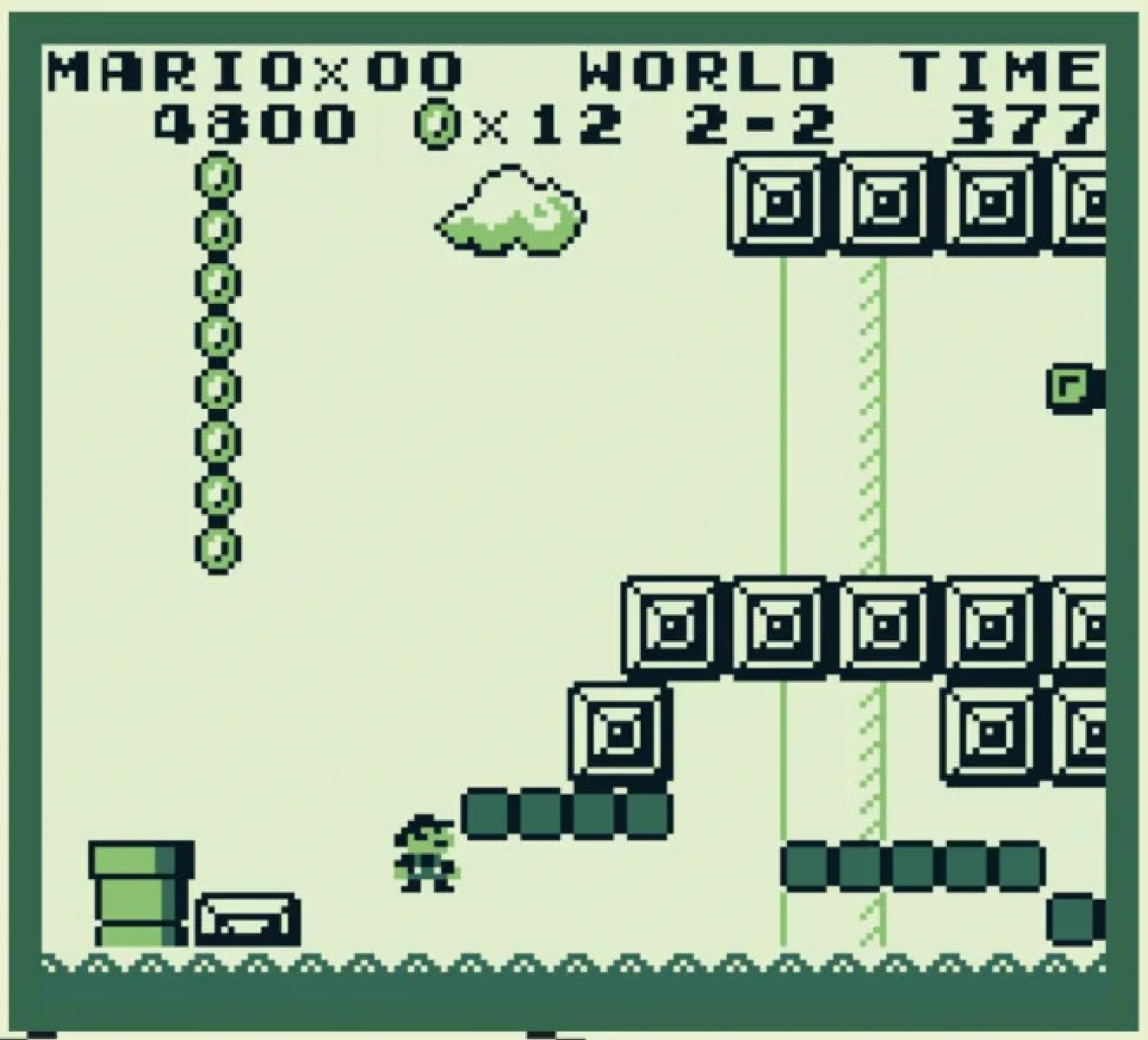
BUNBUN



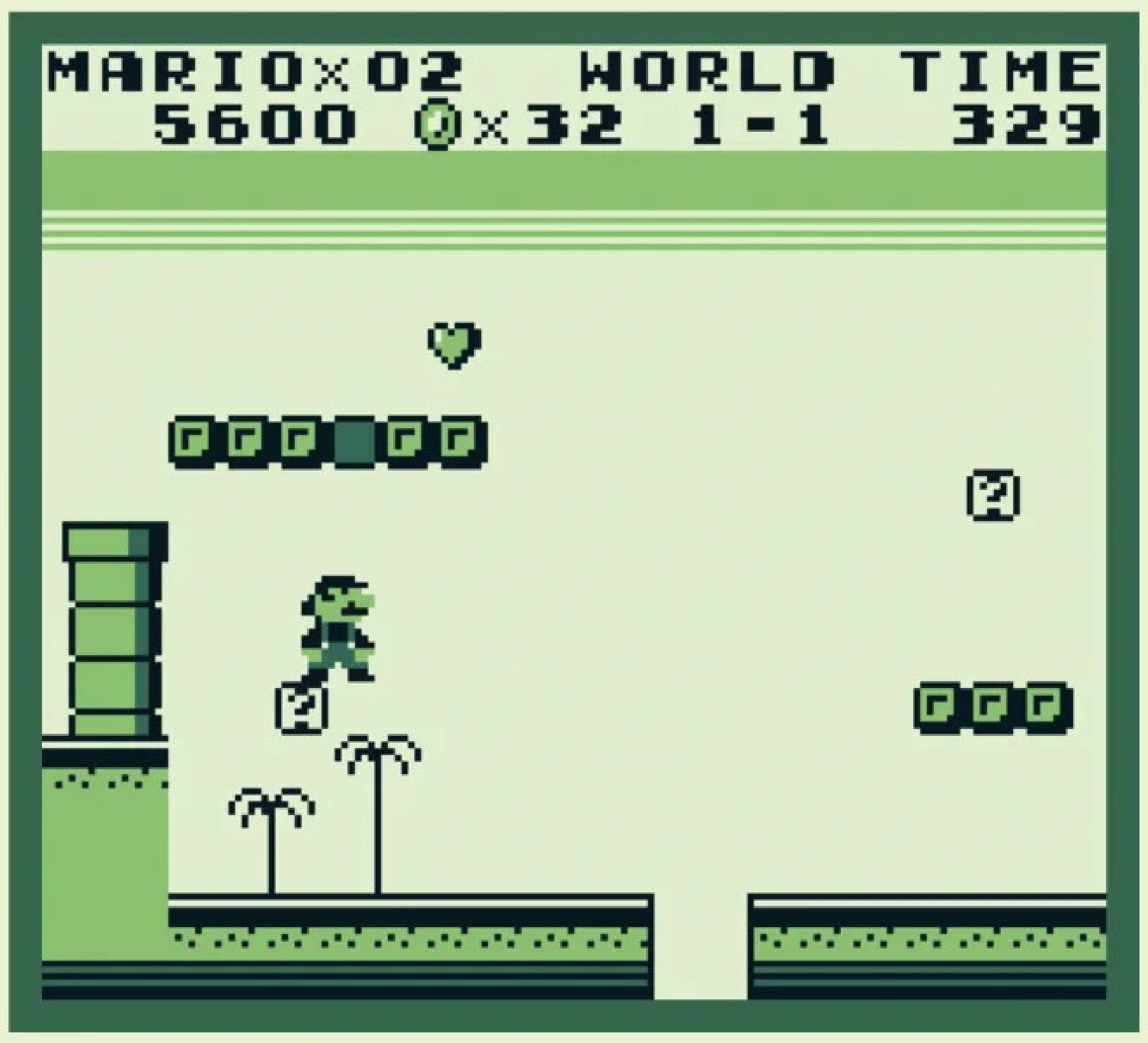
FLY



» [Game Boy] Size matters. The game features a number of routes that can only be accessed by regular-sized Mario.



» [Game Boy] Invisible blocks and hidden platforms, as pictured here, allow access to many secrets areas.



» [Game Boy] It's definitely worth checking every block just in case one hides coins or even a precious 1UP.

THE SUPER SEQUELS

HOW NINTENDO'S MINIATURE SERIES PROGRESSED

SUPER MARIO LAND 2: 6 GOLDEN COINS

■ This is more of a traditional *Mario* game than the original, with the world map and many other features borrowed from the big brother console versions. The graphics are also larger, so it's easier on the eye but it's also more pedestrian. Nonetheless this is a strong sequel.

WARIO LAND: SUPER MARIO LAND 3

■ With Mario nowhere to be seen (brief cameo aside), the third game is almost a standalone title despite the sequel moniker. Wario literally smashes his way through stages, using various helmets to augment his abilities. It's very playable and packed with personality.

SUPER MARIO 3D LAND

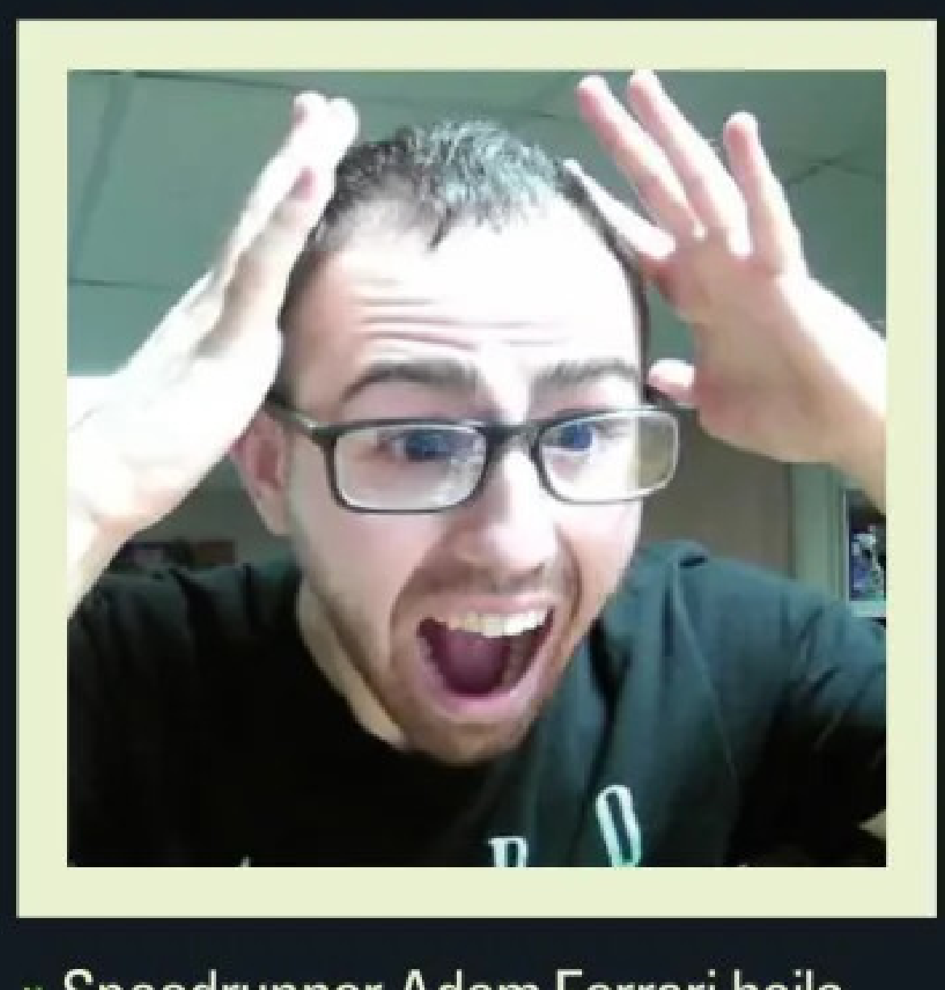
■ After the *Super Mario Land* name lay dormant for years, Nintendo resurrected it in 2011 with this title for the 3DS. While the 3D gameplay has little in common with the original series, it's still a fantastic adventure – and a great precursor to *Super Mario 3D World*.

> "GUNPEI YOKOI AND DIRECTOR SATORU OKADA COOKED UP A MINIATURISED VERSION THAT RESEMBLED THE NES ORIGINAL IN MOST WAYS"

LAND SPEED RECORD

WE CATCH UP WITH SPEEDRUNNER ADAM FERRARI WHO CAN COMPLETE SUPER MARIO LAND IN A LITTLE OVER 12 MINUTES

What is your speedrun history with *Super Mario Land*?
In June of 2020 I took the speedrunning world by surprise by going from no experience with *Super Mario Land 2* to having the record by the end of July. This opened the possibility of me being good at other *Mario* games. I wanted to be the first person to have the main *Super Mario Land 1* and *2* 'any%' world records since Mugg back in 2013. The record holder at the time was EiP, who is currently in second place. Many of the strategies I learned were from EiP and former record holder Callumbal. When I started on the first game I was unable to grasp the physics. I was definitely not the fastest and it took me some time to get good.

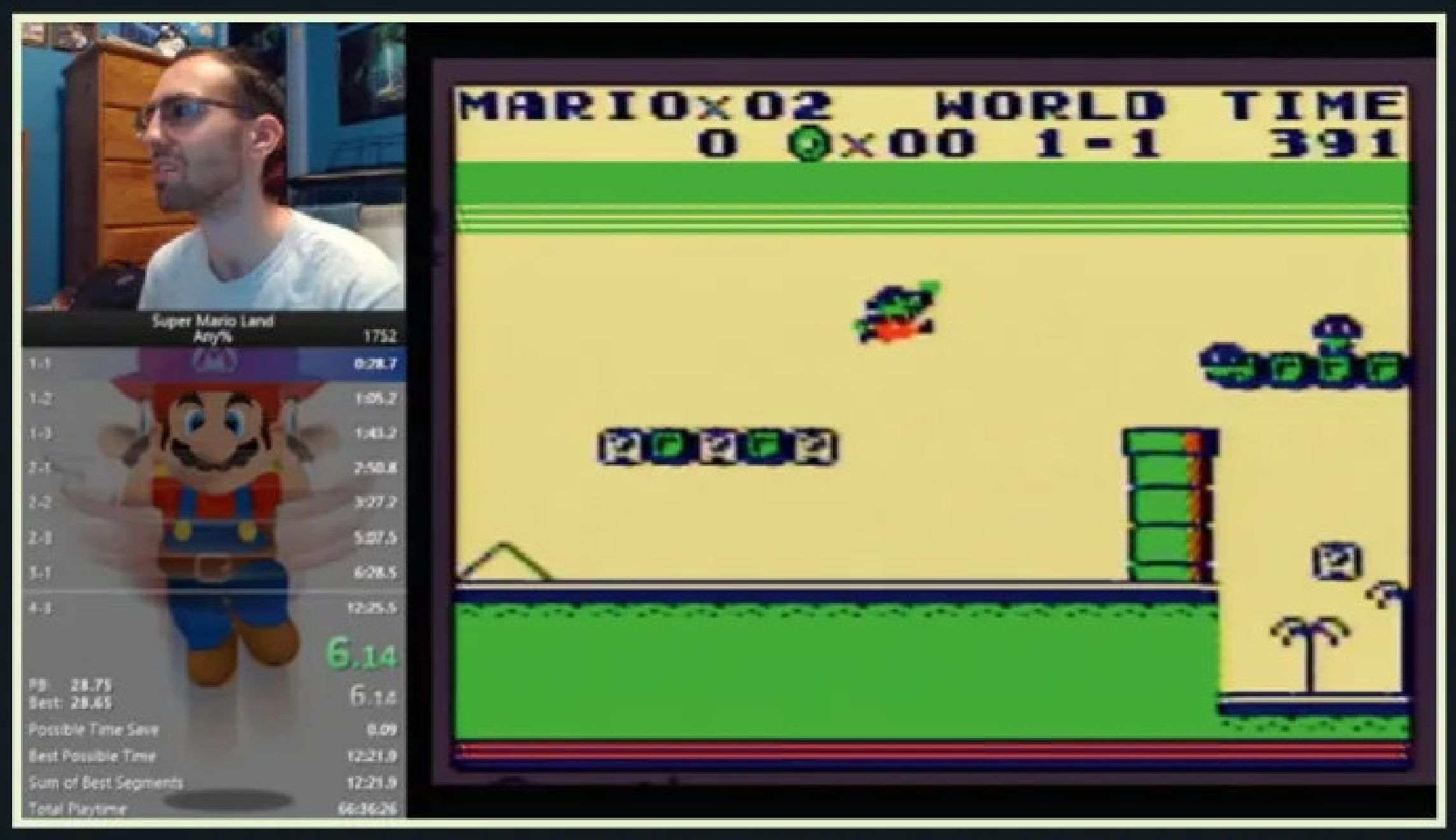

» Speedrunner Adam Ferrari hails from New York. This is his 'failed attempt' face.

How many attempts did it take to achieve the current world record time of 12m 24s?
It took me 1,752 attempts to get the record! In my world record video you can see this number at the top of my livesplit, which is what I use to track the pace of the run after every level. While this seems like a lot, the past couple of world records required 10-20,000 attempts to be set. Efficient practice was the key. I practiced several hours a day for both games when I could.

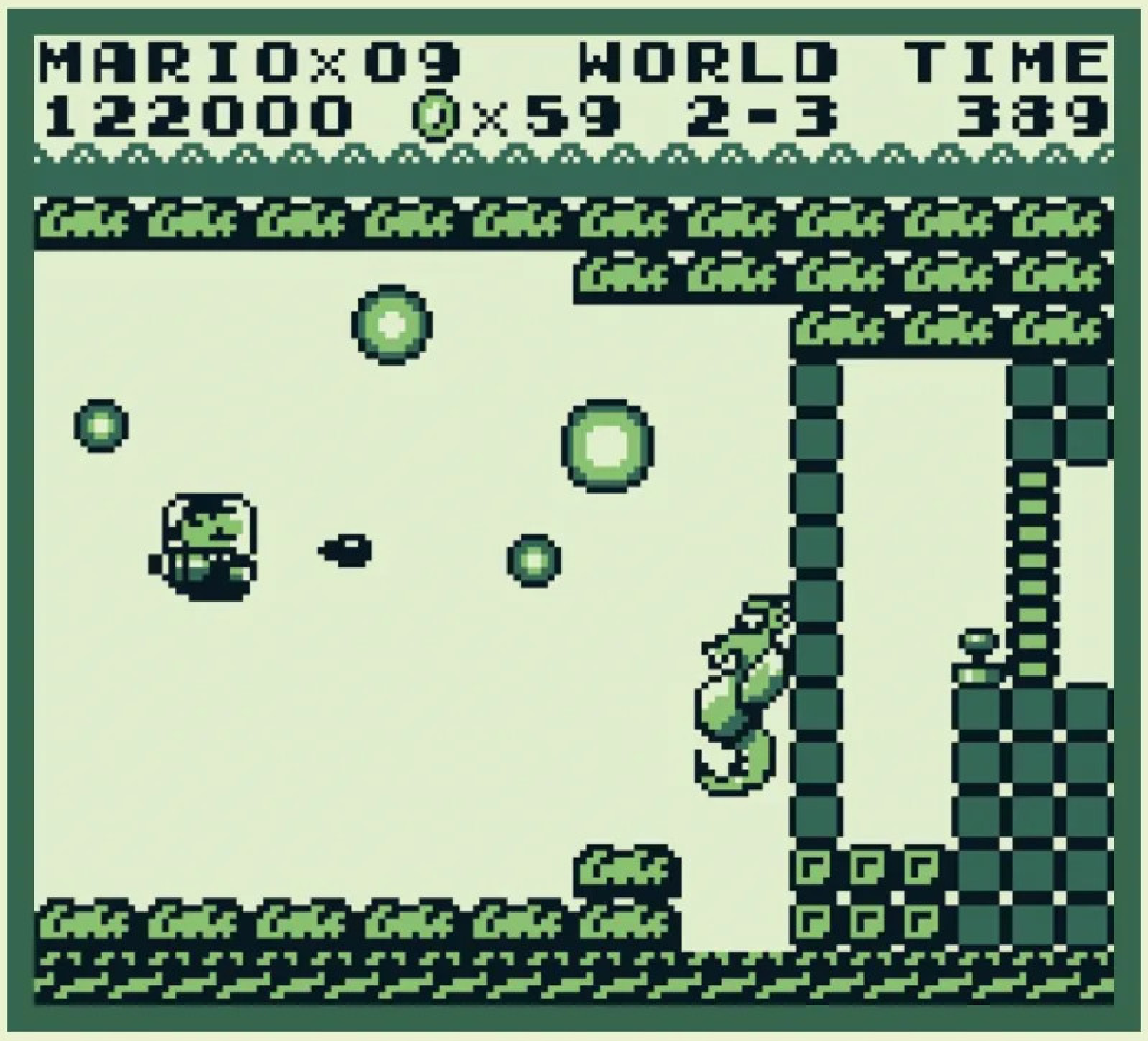
Some people may be surprised to see you use the screen wraparound glitch (this is when Mario is pushed off the left side of the screen in the auto-scrolling shooter stages and reappears on the right). Is this viewed as a legitimate tactic?
Since the category is simply 'any%', this implies that any glitches can be used, unless the rules say otherwise. The screenwraps can only be done on v1.0 of the game, as it was patched in all other versions. The community sees it as legit without any controversy. I can, however, understand why it is surprising to the public.

Do you think it's possible to get an even faster time?
I estimate there are two to three seconds left to save in theory. I'm proud of my record although I know it will be beaten one day. When it does I most likely will not try to get it back. I stream on Twitch.tv/AdamFerrari for all my attempts, and there are many other projects I find more fun that are higher on my list.

What's your personal opinion on *Super Mario Land* as a game?
I think it's a great handheld experience for 1989. Nostalgia aside, I don't think it holds up well today.



» You can watch Adam's *Super Mario Land* record playthrough and many other speedruns on his Twitch channel.

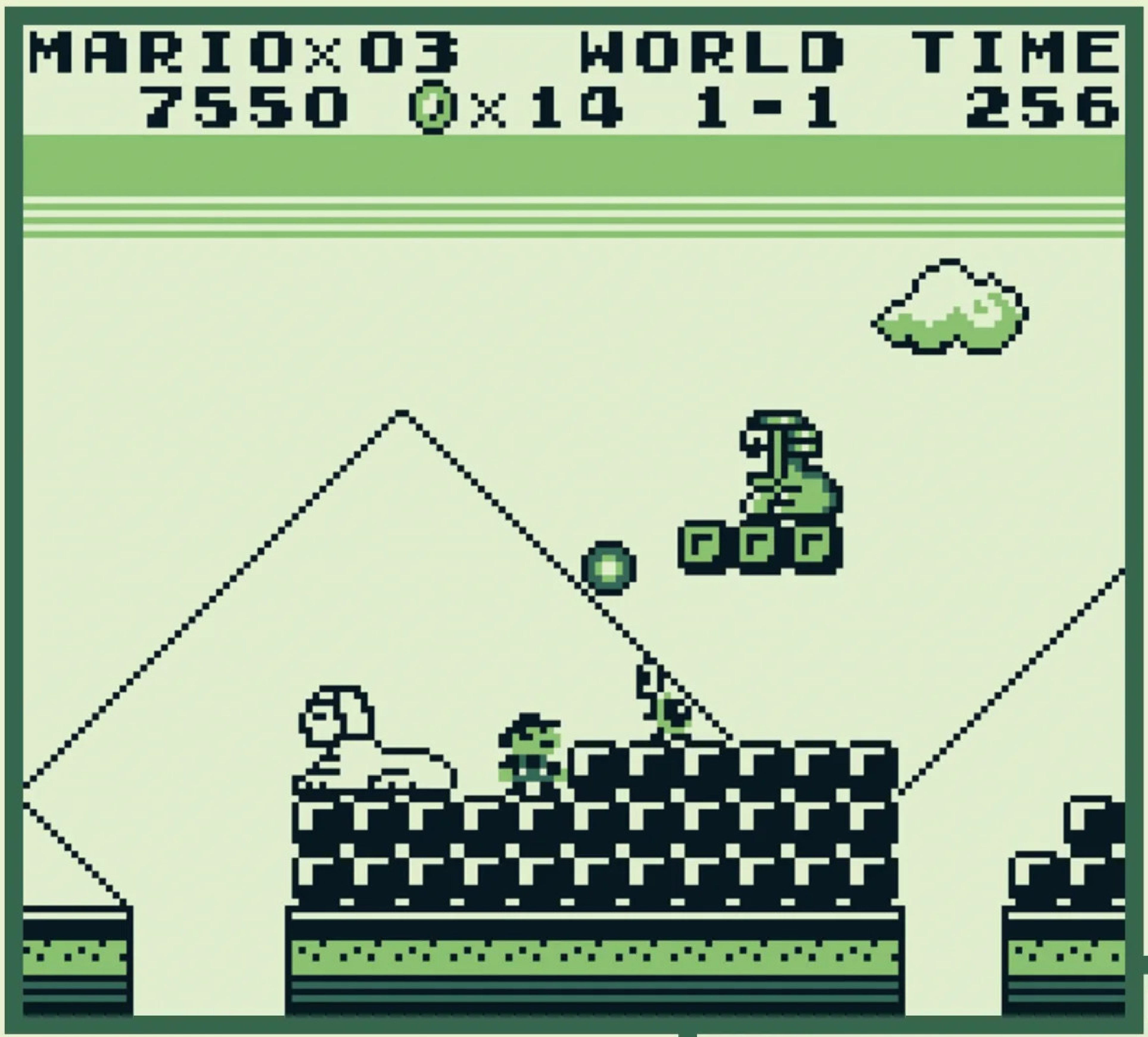


» [Game Boy] Going underwater in the Marine Pop is far more fun than swimming in *Super Mario Bros.*

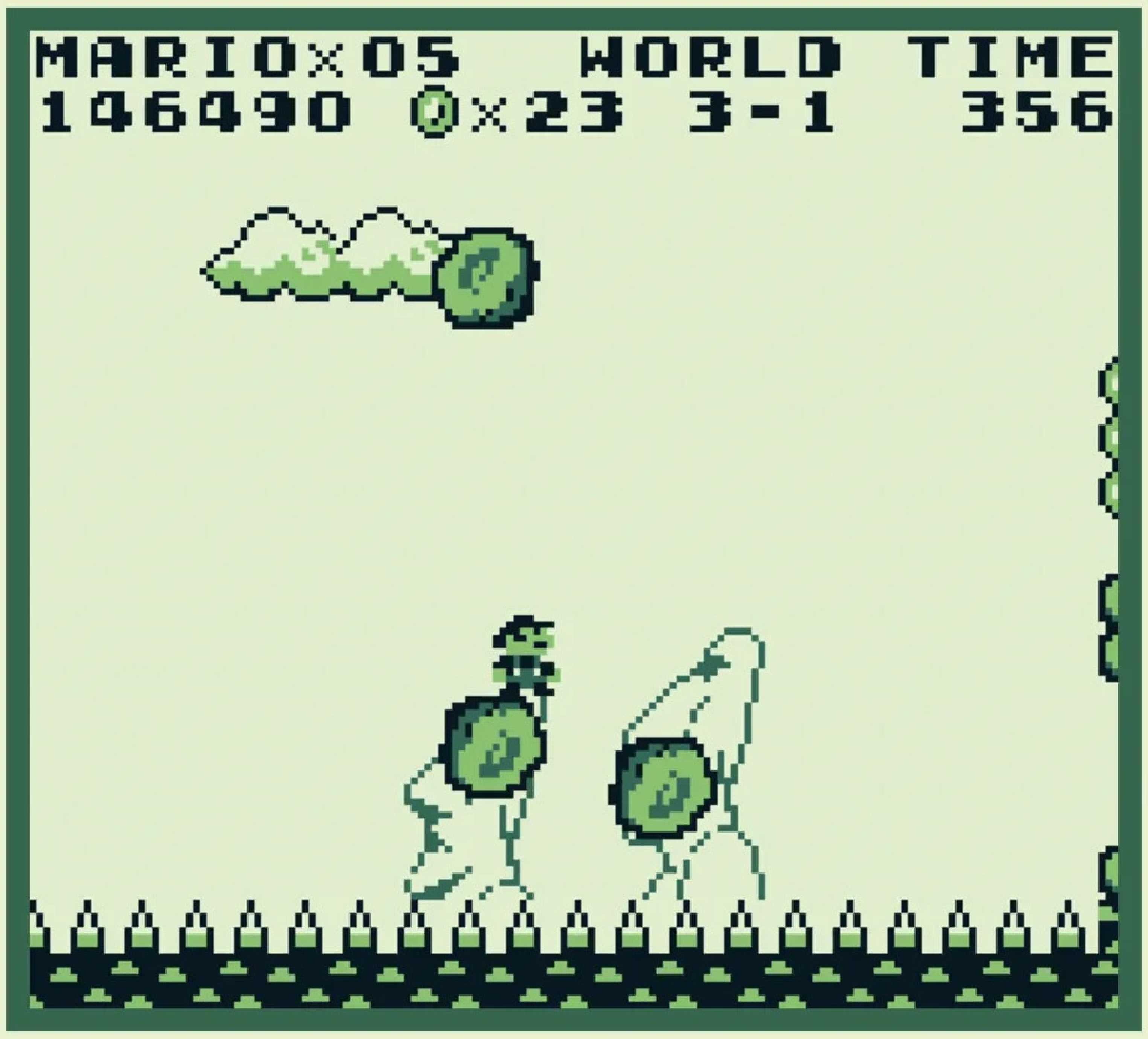
▶ shots). The most obvious change is the addition of shoot-'em-up stages featuring the aforementioned vehicles. That's right: in stages 2-3 and 4-3, the game briefly turns into a *Parodius* clone where Mario blasts antisocial octopuses and kamikaze chickens. These stages provide a welcome deviation from the regular platforming, but do they really belong in the *Mario* world?

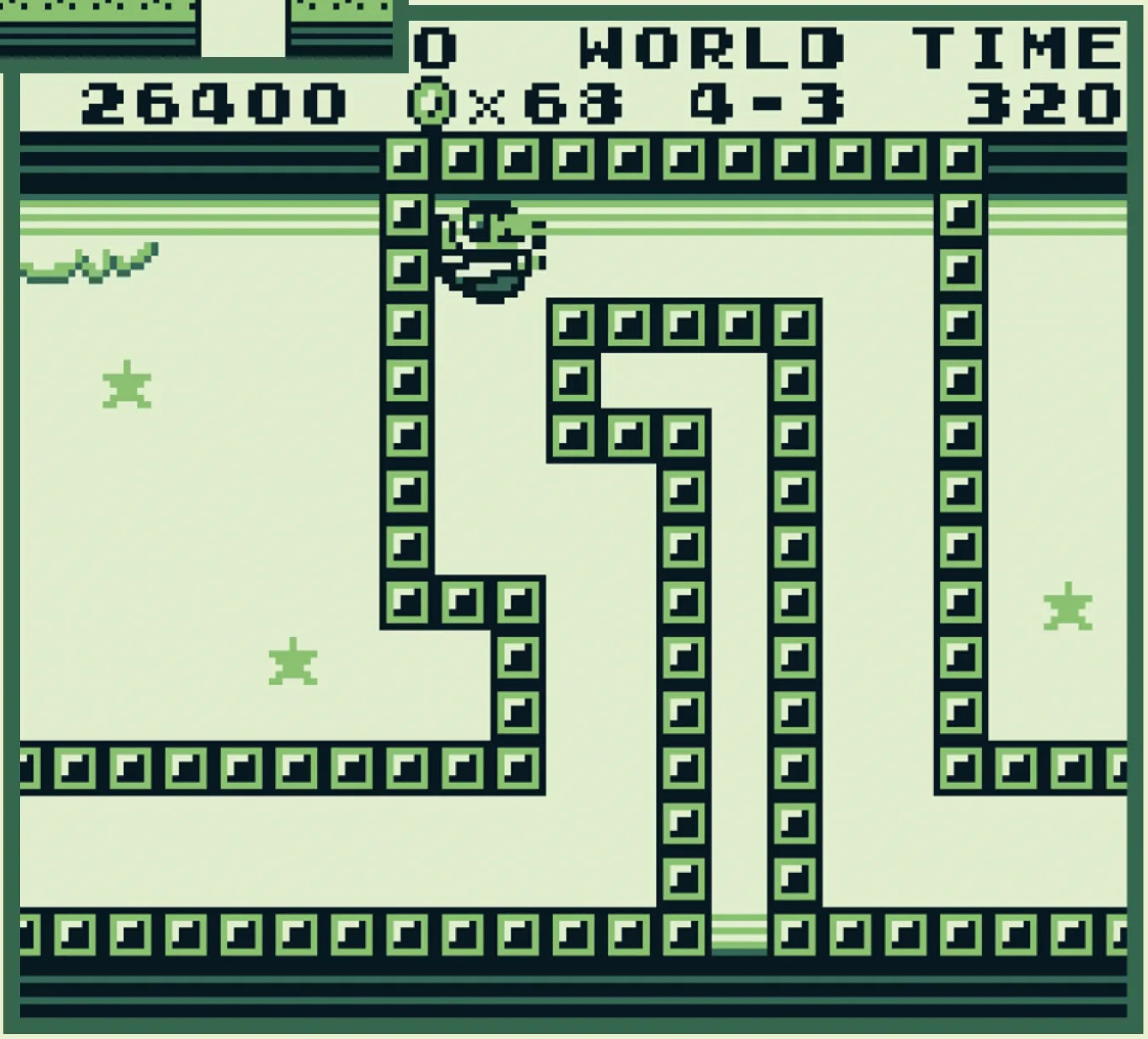
To this point, we have to remember that when *Super Mario Land* debuted in 1989, there was no such thing as an established *Mario* formula. Outside of Japan, *Super Mario Bros 3* had yet to launch, and the Western *Super Mario Bros 2* was a turnip-throwing impostor wearing Mario's dungarees. So if anything, it's surprising that elements of *Super Mario Land* haven't become baked into the series' DNA over time. It's also worth remembering that the Game Boy was a huge hit around the world, unlike the NES, so there will be a lot of *Mario* fans whose first encounter with the series was *Super Mario Land*. For them it's not unusual or oddball – it's just a great little game packed with fun, charm and invention.

KUMO
GUNION
NYOLOLIN


MARIO×03 WORLD TIME
7550 ×14 1-1 256

» [Game Boy] Completing the game unlocks Expert mode where the enemies are more numerous and often show up in new places (like this Gao appearing at the end of stage 1-1).


MARIO×05 WORLD TIME
146490 ×23 3-1 356


O WORLD TIME
26400 ×63 4-3 320

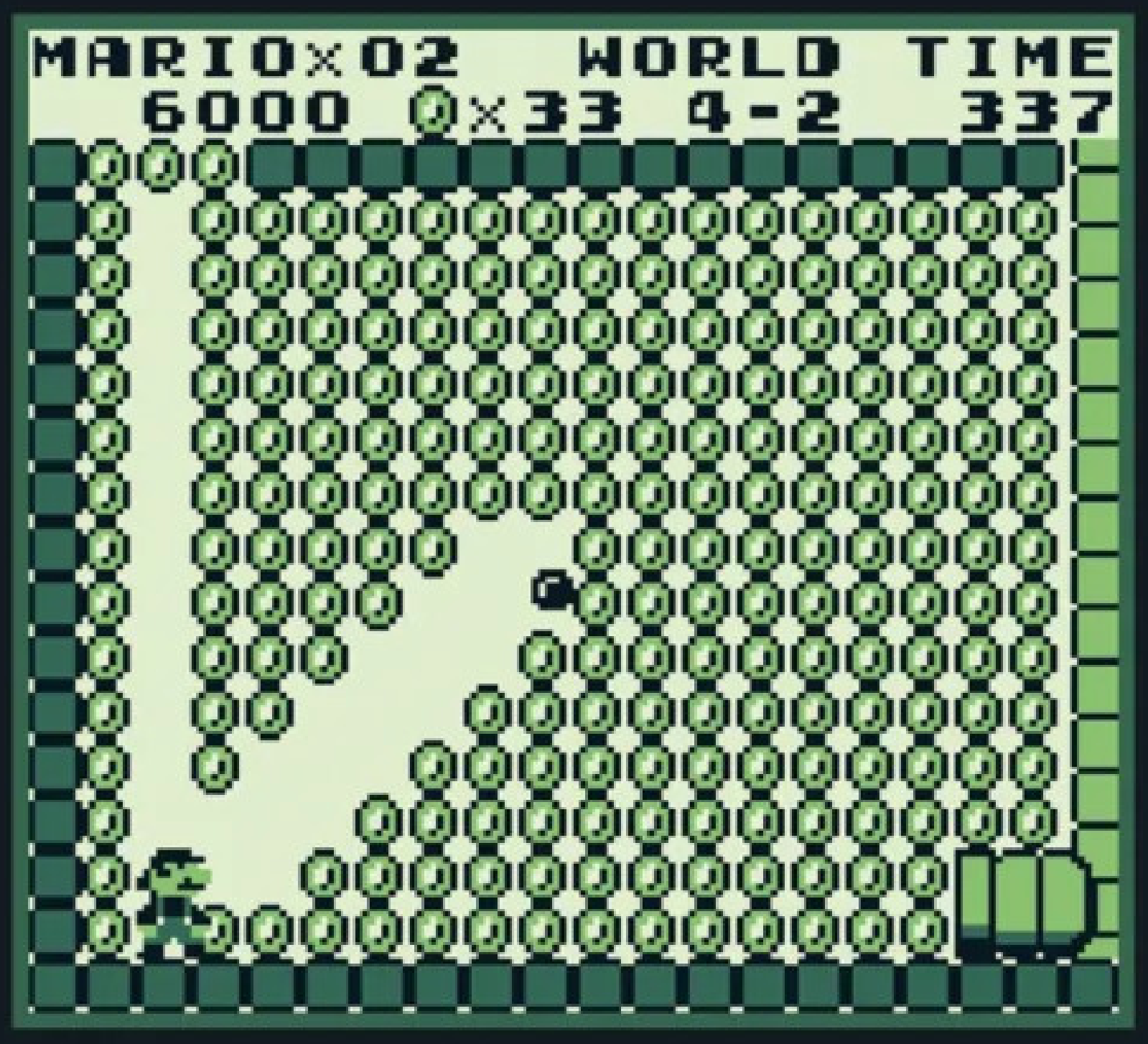
> **"THE GAME BRIEFLY TURNS INTO A PARODIUS CLONE WHERE MARIO BLASTS ANTISOCIAL OCTOPUSES AND KAMIKAZE CHICKENS"**

CVG magazine editor Jaz Rignall knew all about the NES games, but he was still smitten with the handheld version when he previewed it in the July 1989 issue, shortly after its Japanese launch. "*Super Mario Land* is a revamped version of *Super Mario Bros* and has many new features, including a shoot-'em-up section," he wrote. "There are many levels and more hidden features than any previous *Mario* game. It's also unbelievably addictive."

He went on to praise the visuals, maintaining that they worked well on the small, monochrome screen. "The graphics are superb, with a minuscule Mario and brilliant backdrops, all in incredibly tiny detail." There was one concern however. "Scrolling is smooth, but there's a bit of afterblur due to the LCD screen – but it's nothing that impairs the game." *Super Mario Land* was the only launch game to feature fast, full-screen scrolling and therefore highlighted the 'ghosting' effect which was quite pronounced on the original model's LCD screen. There was better news on the ▶

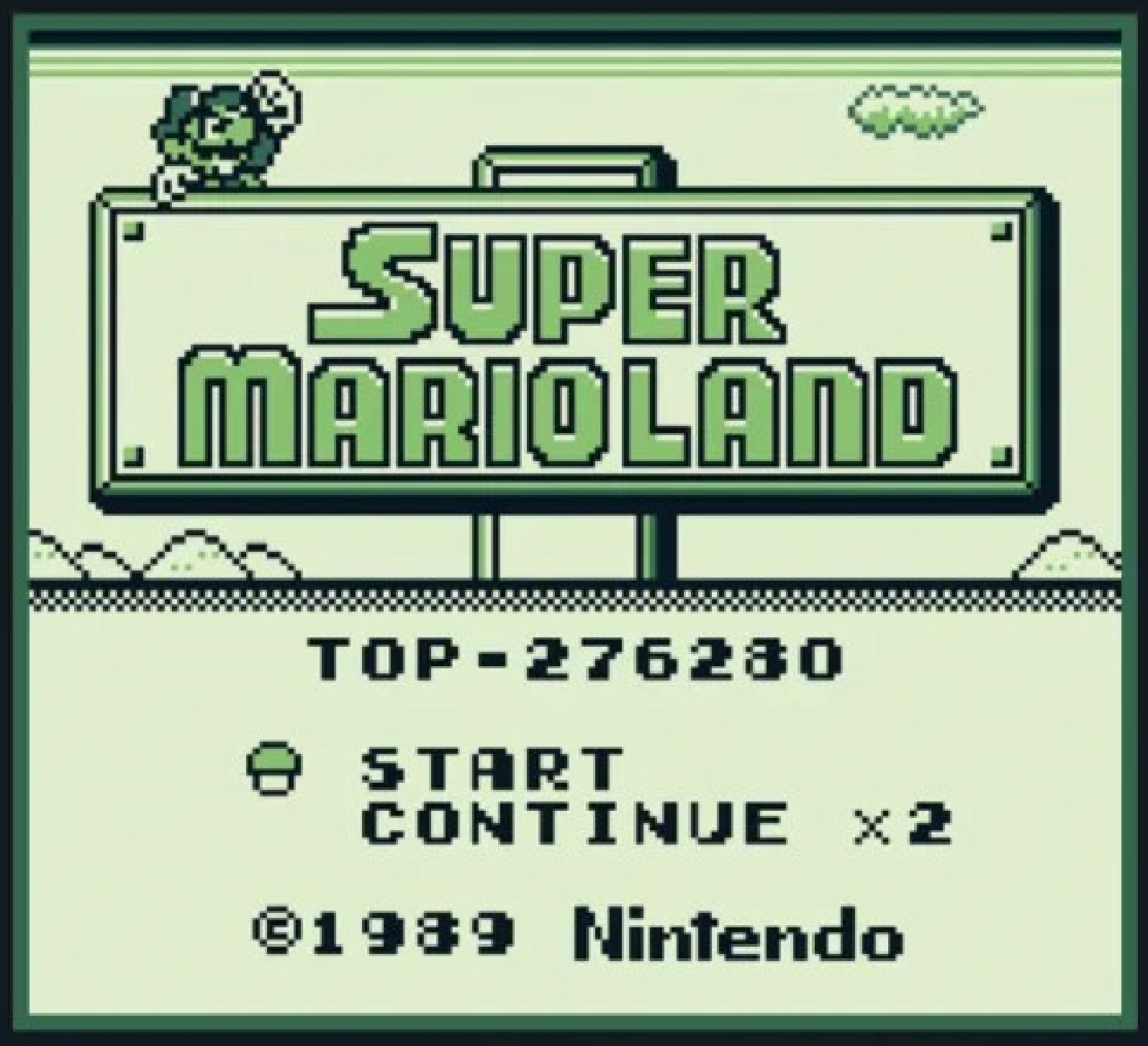
MEKABON
NOKOBON
KING TOTOMESU

THE LAY OF THE LAND


MARIO×02 WORLD TIME
6000 ×33 4-2 337

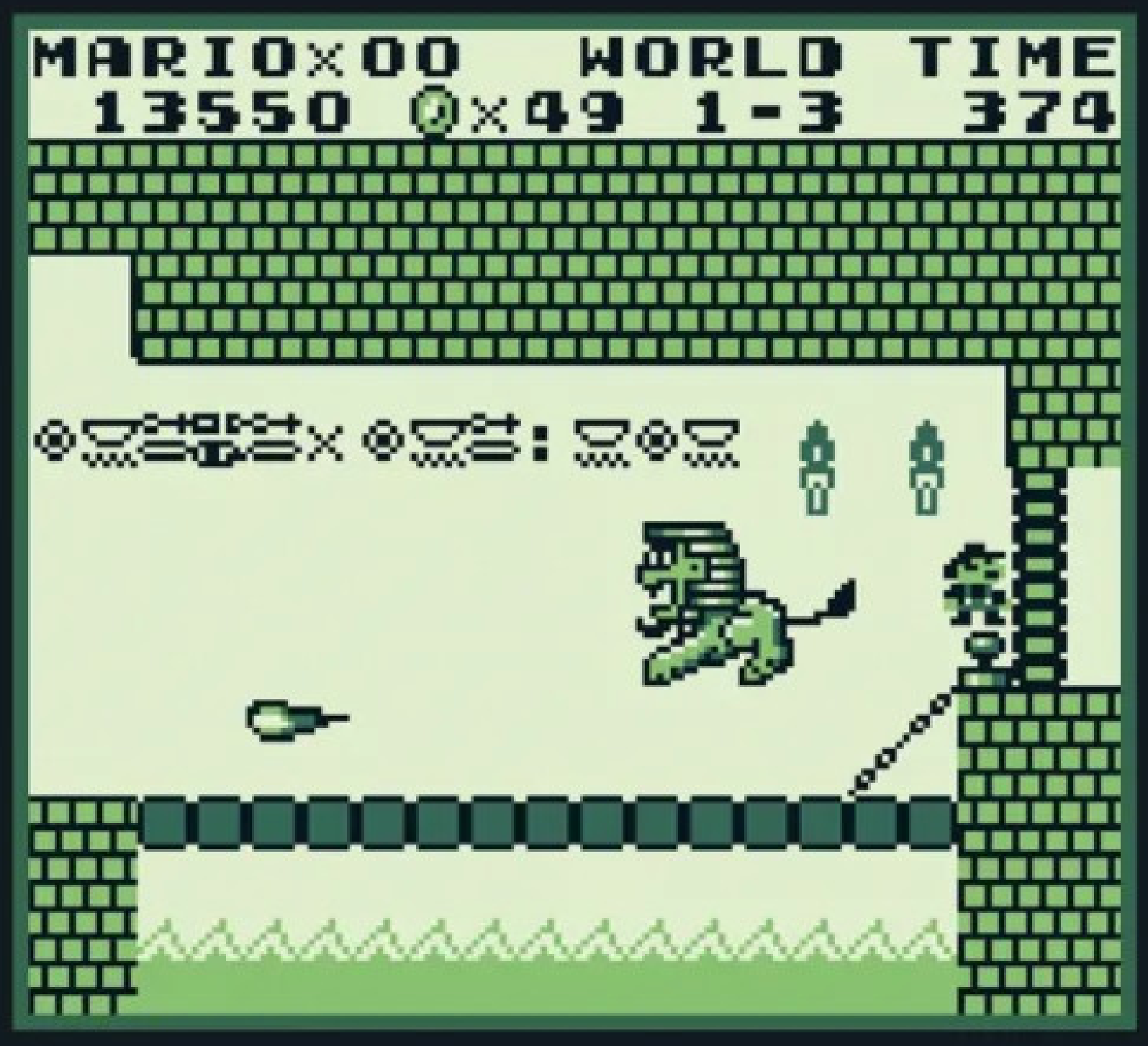
SUPERBALL SCORE

The Superball power-up is great for beating enemies, but because it cannons off objects it's also very useful for collecting coins. For coin rooms like this, the only way you can grab every coin (all 251 of them!) is using the Superball.


SUPER MARIOLAND
TOP-276280
START
CONTINUE ×2
©1989 Nintendo

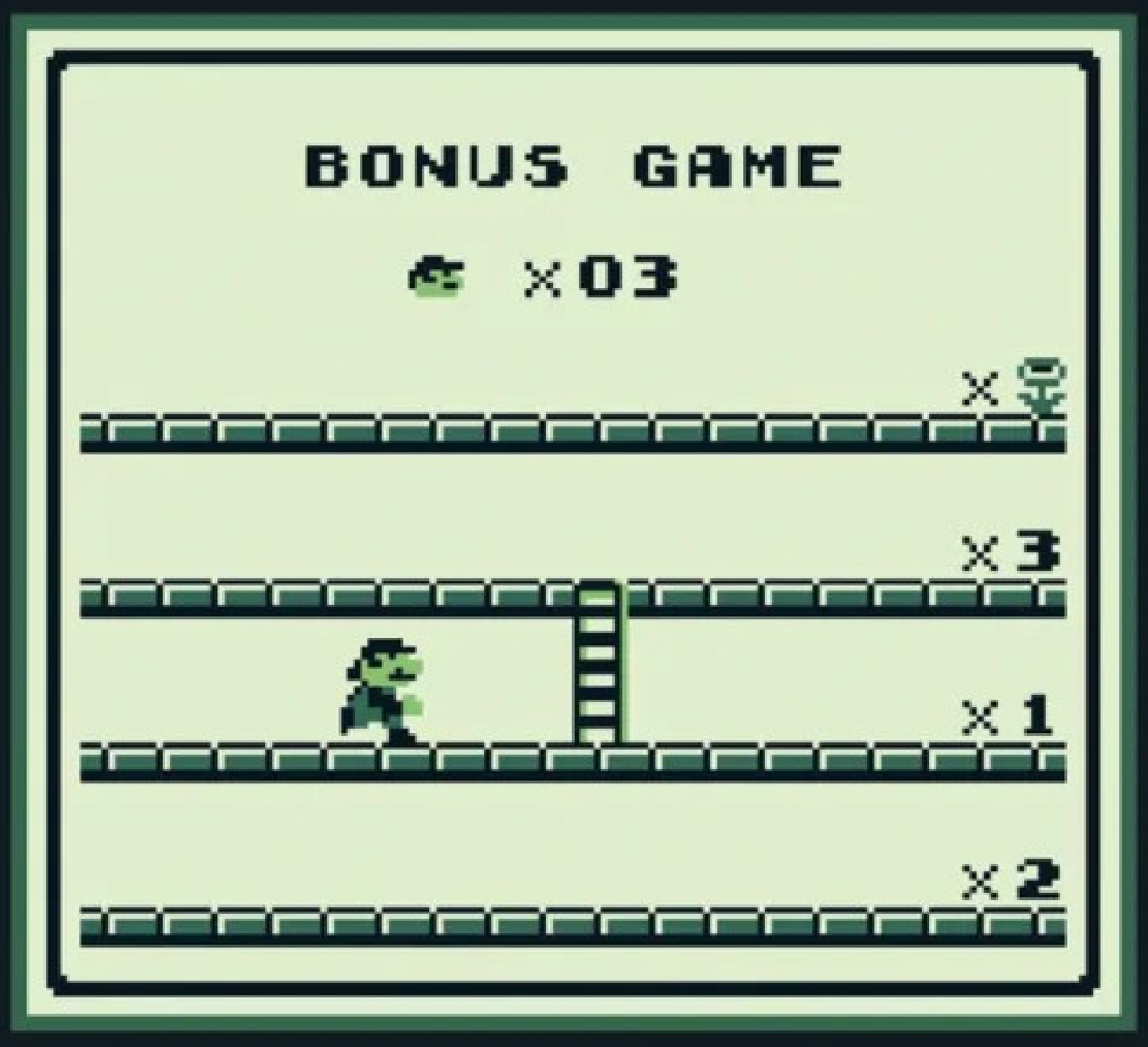
LET'S A GO AGAIN

The game features no save function, so your progress is lost when you lose all your lives. However, a continue option is awarded for every 100,000 points you score, so try and earn as many points as you can by defeating enemies and collecting coins.


MARIO×00 WORLD TIME
13550 ×49 1-3 374

HIT THE SWITCH

In classic *Mario* tradition, you can defeat the bosses of kingdoms one and three even if you're small and have no Superball. Just run and jump over them and, providing your timing is perfect, you'll land on a handy kill switch which sees them off.


BONUS GAME
×03
×3
×1
×2

BONUS BOOM

In the end of round bonus rooms, you'll notice that the two and three 1UPs always have a single row between them. Always choose this row as the ladder will no doubt appear in your path and you'll walk out with two or three extra lives.

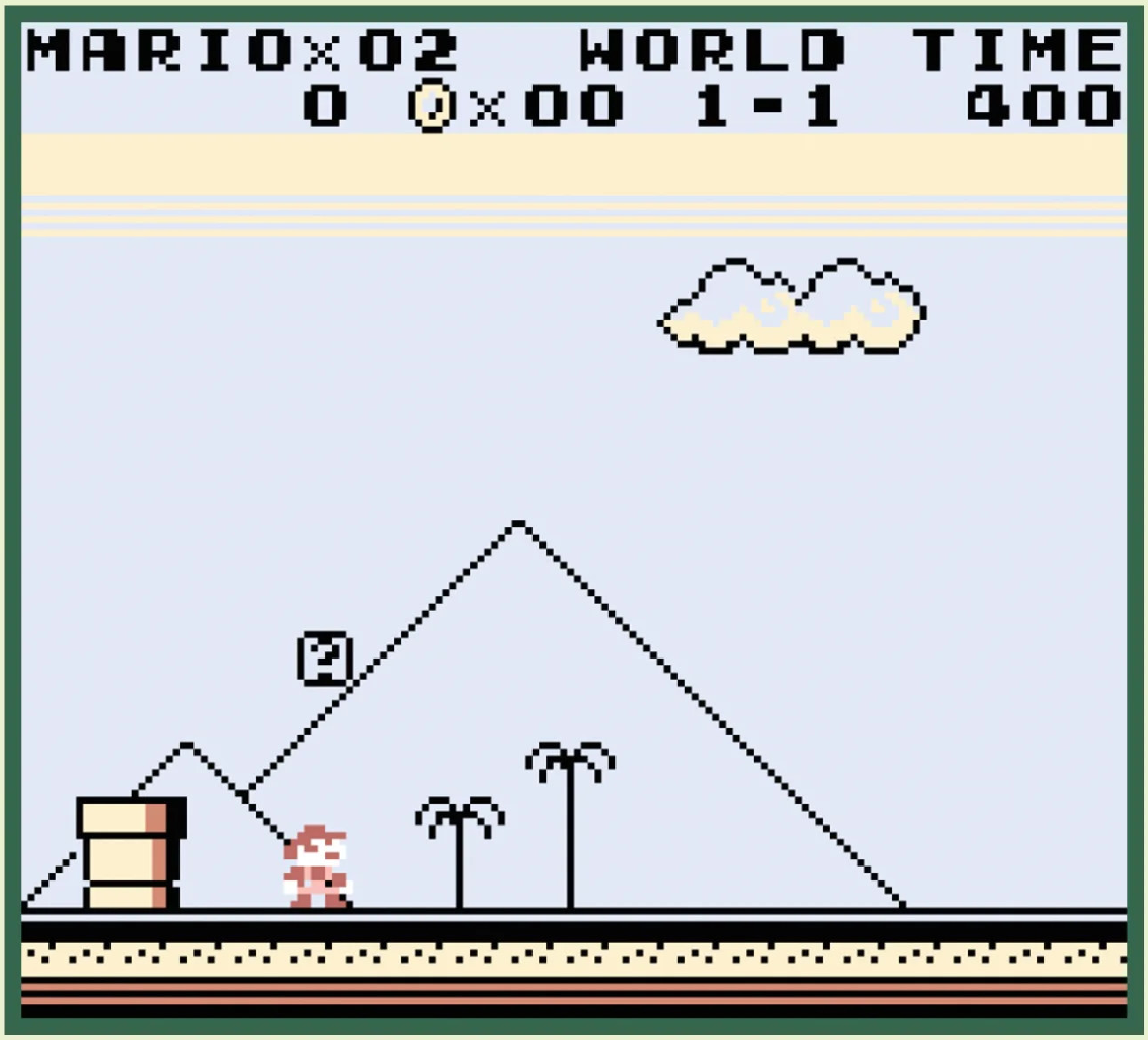
GET THE FUNK OUT

REMEMBERING WHEN MARIO CLIMBED TO THE TOP OF THE MUSIC CHARTS

The pop charts have always attracted novelty hits that spilled over from other media. Remember Zig and Zag? Crazy Frog? Doctor Spin? That last outfit released a dance tune based on the 'Type A' music from the Game Boy version of *Tetris* which scored a number-six hit in the UK in 1992. It was unsurprising then when just a few weeks later, a tune based on *Super Mario Land*'s stage 1-1 music also entered the top ten. This dance remix was masterminded by British pair DJ Simon Harris and rapper Colin Case under the alias Ambassadors Of Funk.

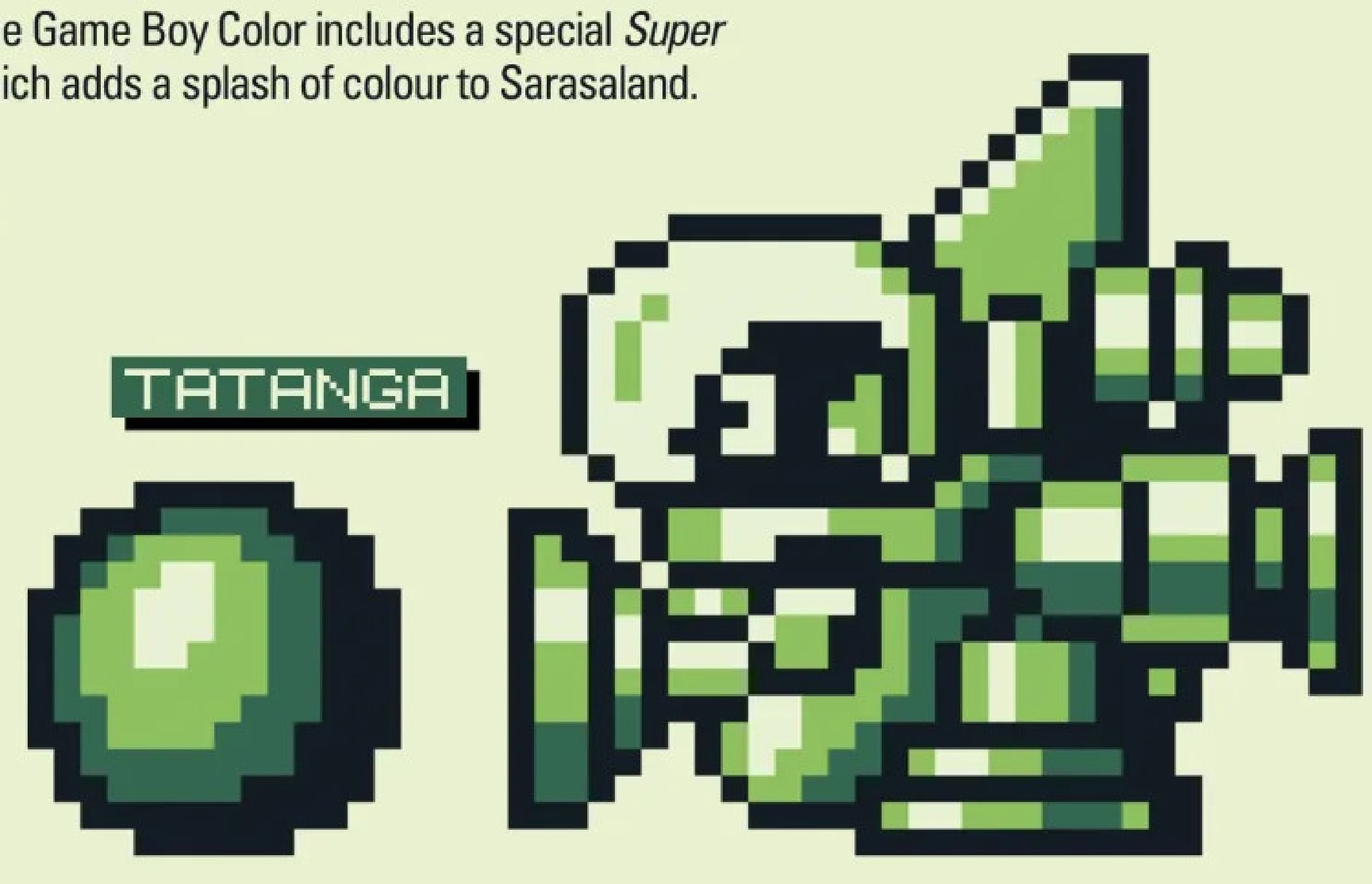
What's perhaps more surprising is that Nintendo UK didn't just approve the release, they loved it – and even provided an actor wearing a comically oversized Mario costume to appear in the music video. Even more amazingly, Shigeru Miyamoto was apparently a fan of the *Super Mario Land* tune and OKed plans for Harris to produce an *entire album* of Mario remixes. This was released in 1993 as *Super Mario Compact Disco*, but only in Japan. If you really need high-tempo *Mario* dance music in your life then don't worry, it's currently available for streaming.

Nintendo
SUPER MARIO COMPACT DISCO
Ambassadors of Funk featuring M.C.Mario

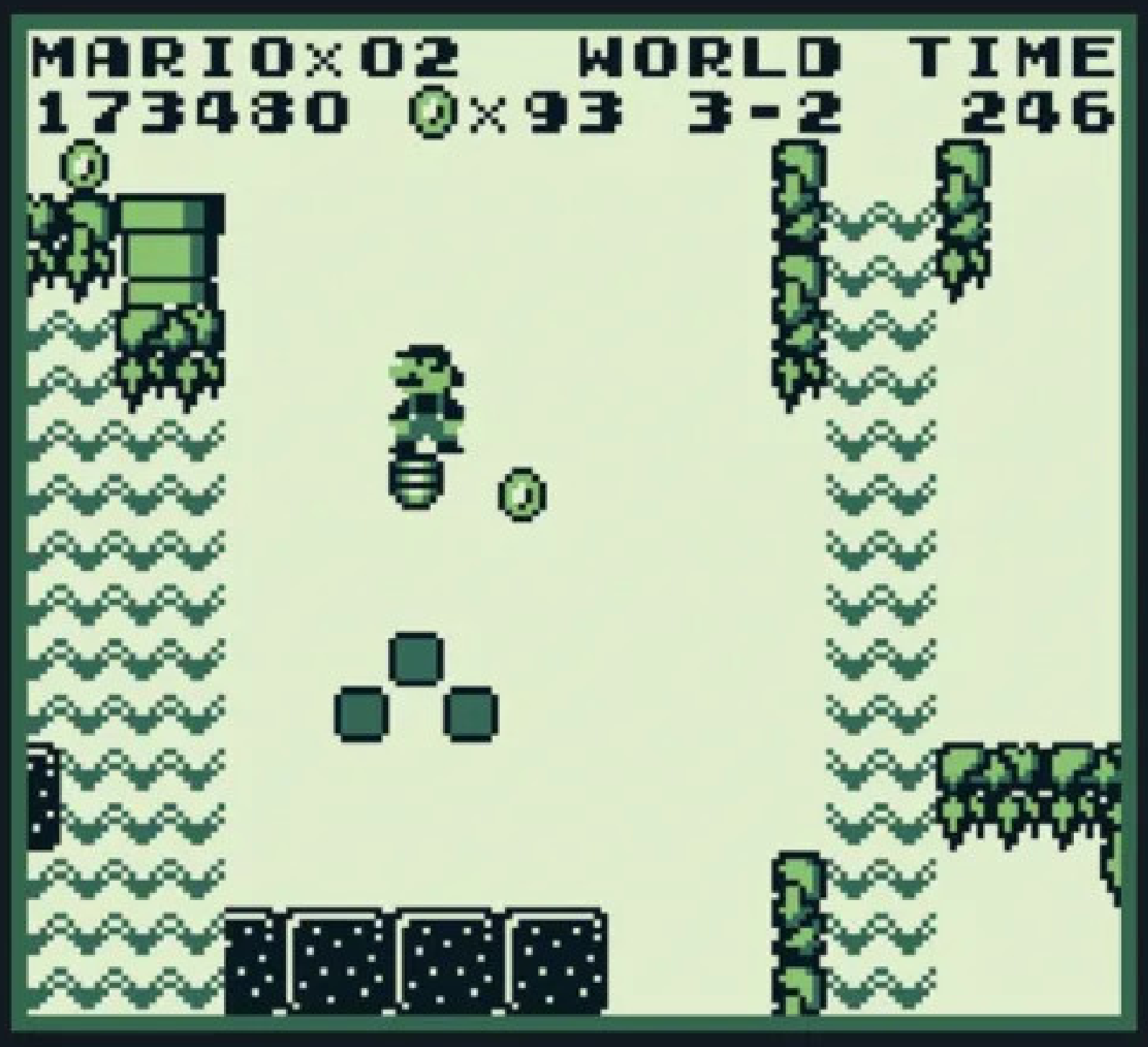

MARIO×02 WORLD TIME
0 ×00 1-1 400

» [Game Boy Color] The Game Boy Color includes a special *Super Mario Land* palette which adds a splash of colour to Sarasaland.

PIRANHA PLANT

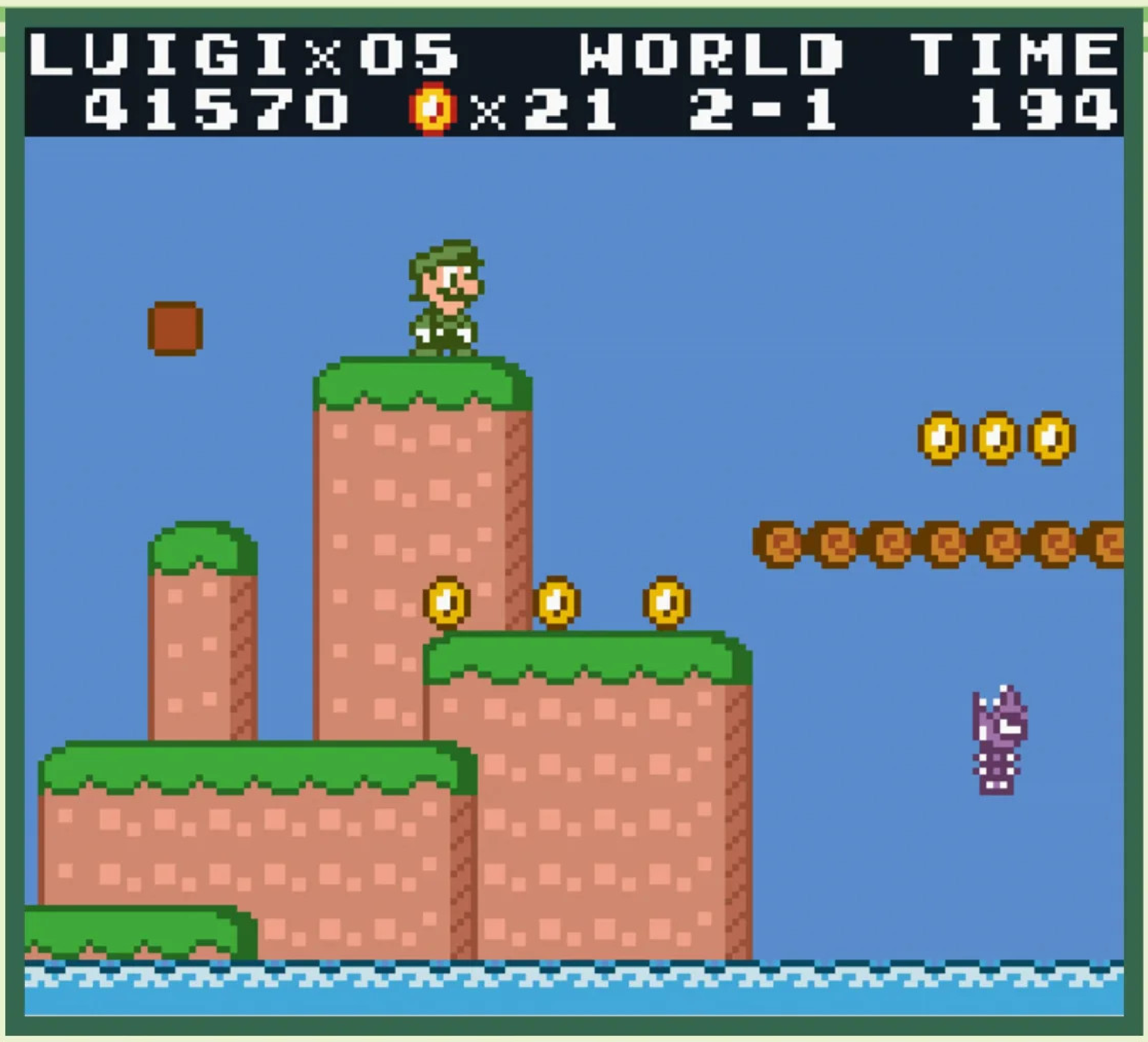


HOW TO MASTER MARIO'S FIRST HANDHELD ADVENTURE

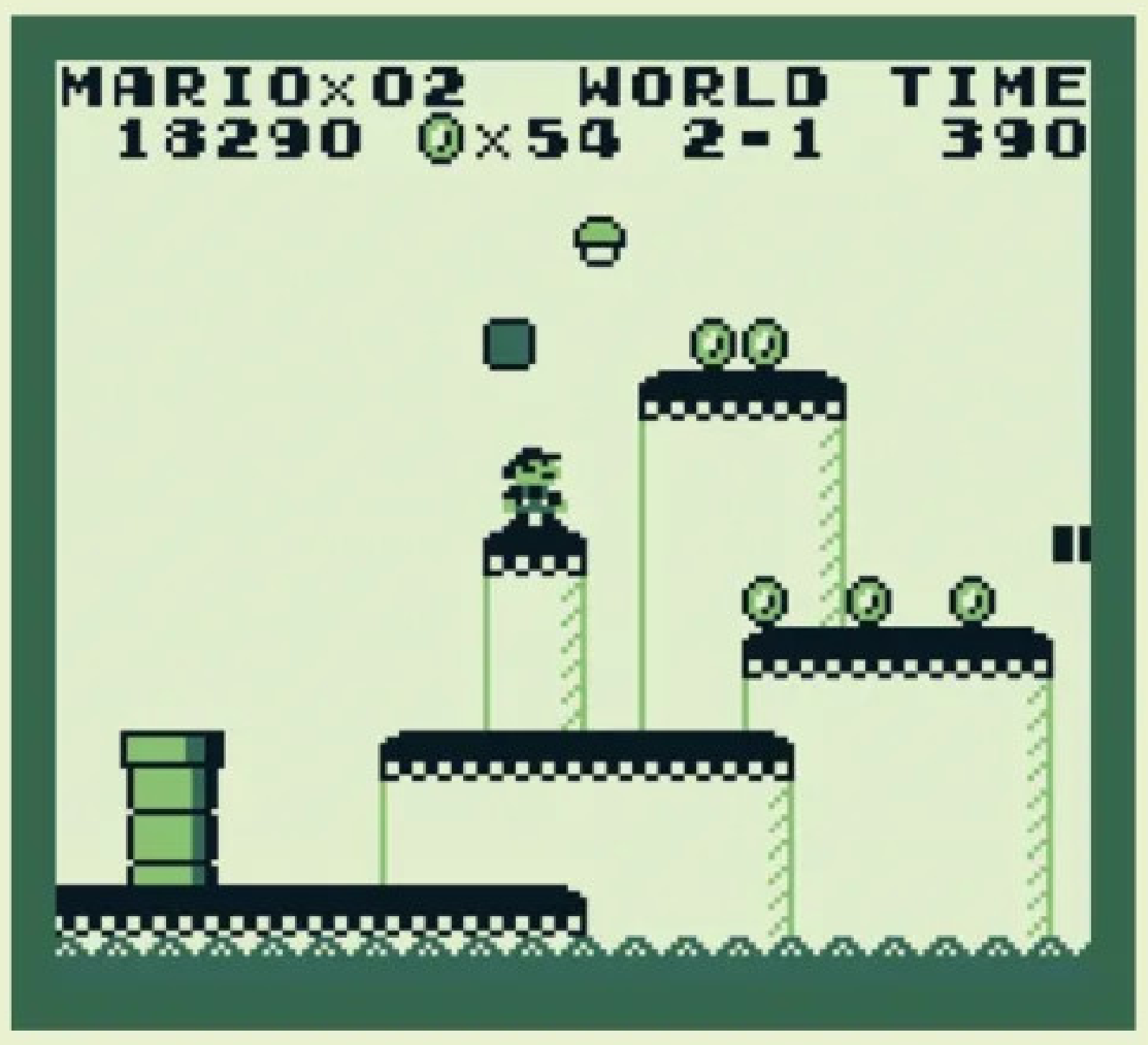


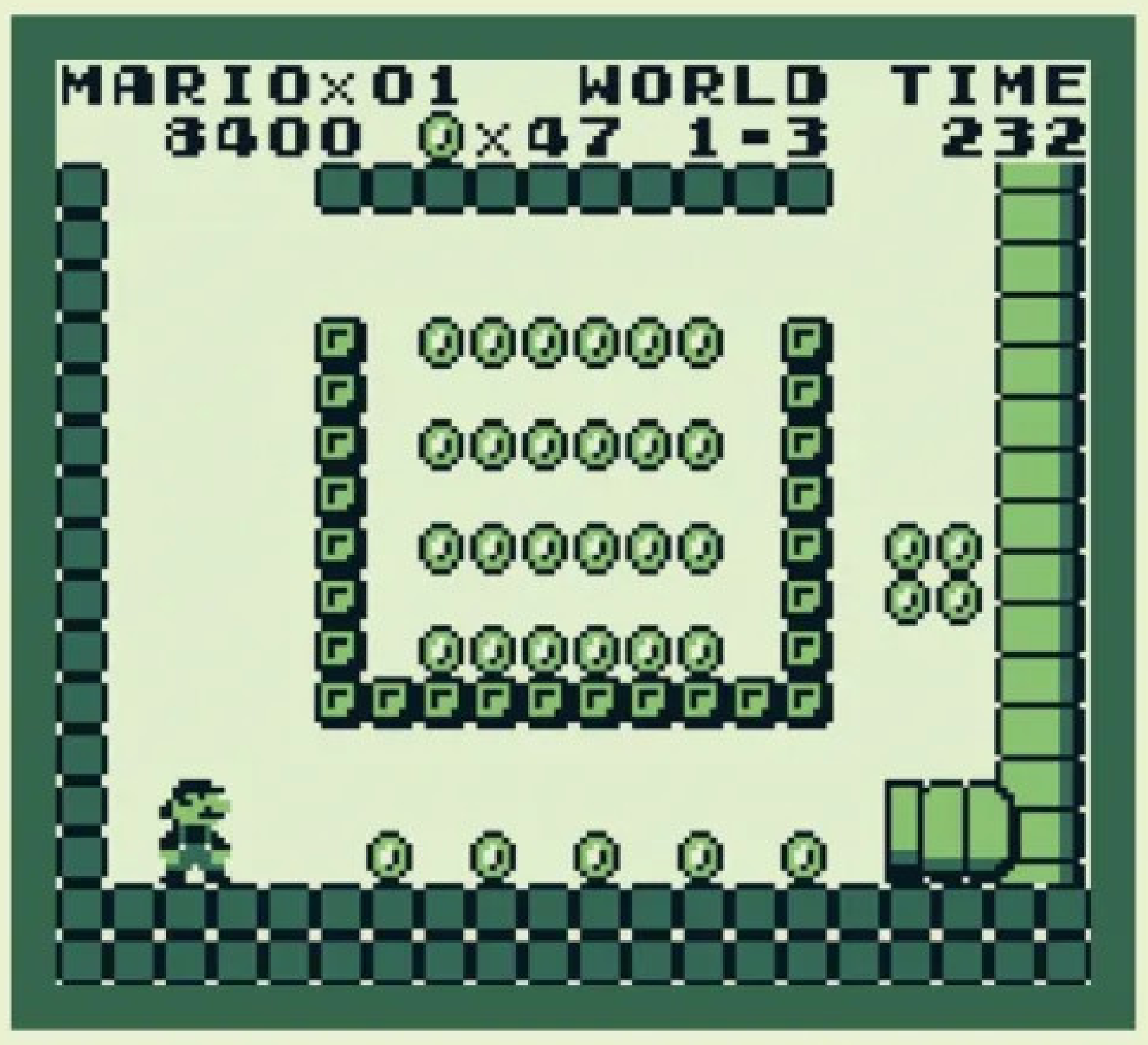
CEILING FAN

In some stages (such as 1-3 and 3-2) you may see coins hidden at the top of the screen, out of reach, and wonder how to get them. The trick is to search around for an invisible block which will reveal a handy lift that takes you up to them.



» [Game Boy Color] Homebrewed by 'toruzz' in 2019, *Super Mario Land DX* recreates the game using the Game Boy Color's full palette. You can even play as Luigi.





▶ audio side. "The sound is in glorious stereo," wrote Jaz, "and *Super Mario Land* features some great tunes and jingles." It certainly did, thanks to composer Hirokazu Tanaka's delightfully catchy soundtrack. In particular, stage 1-1 features what's perhaps the most familiar and iconic piece of music of any *Mario* game. It even became a top-ten hit single in the UK thanks to Ambassadors Of Funk (see Get The Funk Out).

When *CVG* later reviewed the game it was awarded 93%. *Mean Machines* also posted a positive 90% review, with Matt Regan saying, "This game is guaranteed a semi-permanent place in my Game Boy, along with *Tetris*." The Game Boy version of *Tetris* was a revelation, of course, but it came bundled with the system, so the general consensus was that *Super Mario Land* was the first game you should go out and *buy*. And people did buy it. Lots of people. All told, 18.1 million copies were sold worldwide, which is more than *Super Mario Bros 3* (17.3m) and not far behind *Super Mario World* (20.6m). If you discount *Tetris*, on account of it being mainly sold as a pack-in title, *Super Mario Land* is the single bestselling title for the original Game Boy.

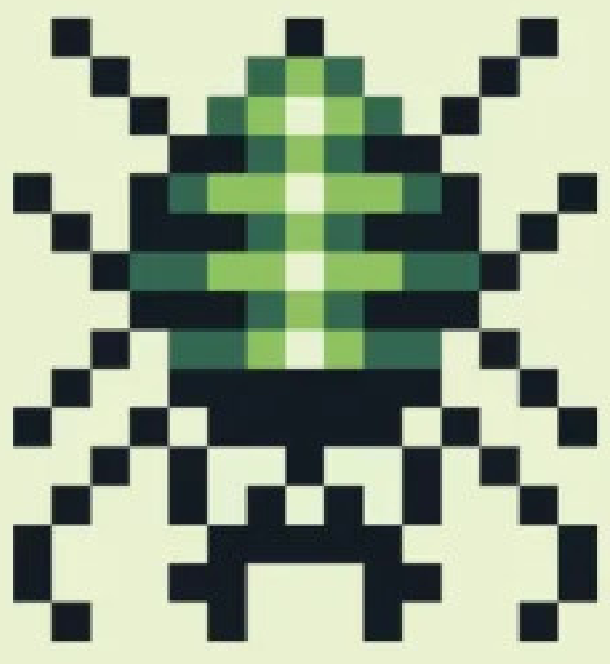
Nintendo was keen to capitalise on this success and a series was born, under the tutelage of Gunpei Yokoi. *Super Mario Land 2: 6 Golden Coins* was released in 1992 and it marked the debut of Wario, Mario's dastardly alter-ego who has stormed Mario's castle during the events of the first game. This new arch-rival would then take centre stage, starring in *Wario Land: Super Mario Land 3* in 1994. Wario would go on to headline many more games, including the trio of *Wario Land* titles released between 1998 and 2001 for the Game Boy line.

As for the original *Super Mario Land*, it's one of the few 'classic' *Mario* games that Nintendo has not updated. It hasn't completely ignored the game however, having included custom colour palettes for it in both the Super Game Boy and Game Boy Color (the enhanced hardware also largely eliminated the ghosting effect). Since 2011, the game has been available for the Nintendo 3DS via the Virtual Console service. For us, this is currently the best way to play the game, on the 3DS' pleasing backlit screen (if you hold down the shoulder buttons and press Y you can even apply the yellow/green screen tint from the original). As with other Virtual Console releases, it comes with a built-in save and restore feature, yet it's not needed as *Super Mario Land* was designed without saving in mind. If you loved the game when it came out you'll breeze through it now in under an hour. You'll discover nothing new in Sarasaland but what you will find is heart-warmingly familiar. ✱

> "SUPER MARIO LAND IS ONE OF THE FEW CLASSIC MARIO GAMES THAT NINTENDO HAS NOT UPDATED"

ROKETON

POMPON FLOWER


SUU

YURARIN

PIONPI

PLAYING WITH SUPER POWER

INSIDE THE SUPER NINTENDO

OVER 30 YEARS SINCE IT HIT JAPAN, MANY PLAYERS STILL FEEL THAT THE SUPER NINTENDO IS THE BEST CONSOLE EVER. WE SPEAK TO VETERAN SNES DEVELOPERS TO FIND OUT HOW THE GAMES THAT MADE THIS GREY BOX LEGENDARY WERE SHAPED BY WHAT WAS INSIDE OF IT

WORDS BY NICK THORPE

ON
OFF
POWER
Nintendo
SUPER NINTENDO
ENTERTAINMENT SYSTEM
Nintendo

Videogames hardware production is a fascinating business, and one that has a couple of odd, counterintuitive quirks. The first one is that technological superiority is usually more harmful than it is helpful – if power drove sales, we'd still be talking about the dominance of the Atari Lynx and Xbox. The second is that success is hard to sustain for two generations in a row. All too often, companies have followed up their most popular systems with machines that range from underwhelming to total bombs, such as the Atari 5200, Saturn and Xbox One. As the longest tenured hardware manufacturer in the business, Nintendo has hardly been immune from these truths, with the Nintendo 64 and Wii U serving as ample proof. But it has produced the only machine we can think of that served as an exception to both of those statements at the same time – the Super Nintendo Entertainment System, or Super Famicom as it's known in Japan. But as readers will know, it's far more than just a historical anomaly, and is one of the most highly regarded platforms in the history of videogames, and much of its success can be attributed to Nintendo's hardware design prowess. ▶

MIKE DAILLY

■ During the SNES years, the *Lemmings* co-creator was a programmer working on a variety of formats. Today, he owns the indie developer Ogre Games.

CHRIS WEST

■ Having coded games for Domark and Vivid Image during the SNES days, Chris'd go on to found West Racing with his brother Tony, which is still active today.

JAZ RIGNALL

■ Beginning the SNES era on *CVG*, Jaz would launch the legendary *Mean Machines* before going on to work on SNES games such as *The Jungle Book*.

NICK JONES

■ Starting the SNES era at Probe, Nick would move to the USA to new studio Shiny. He now works on the *NBA 2K* series at Visual Concepts.

TONY WEST

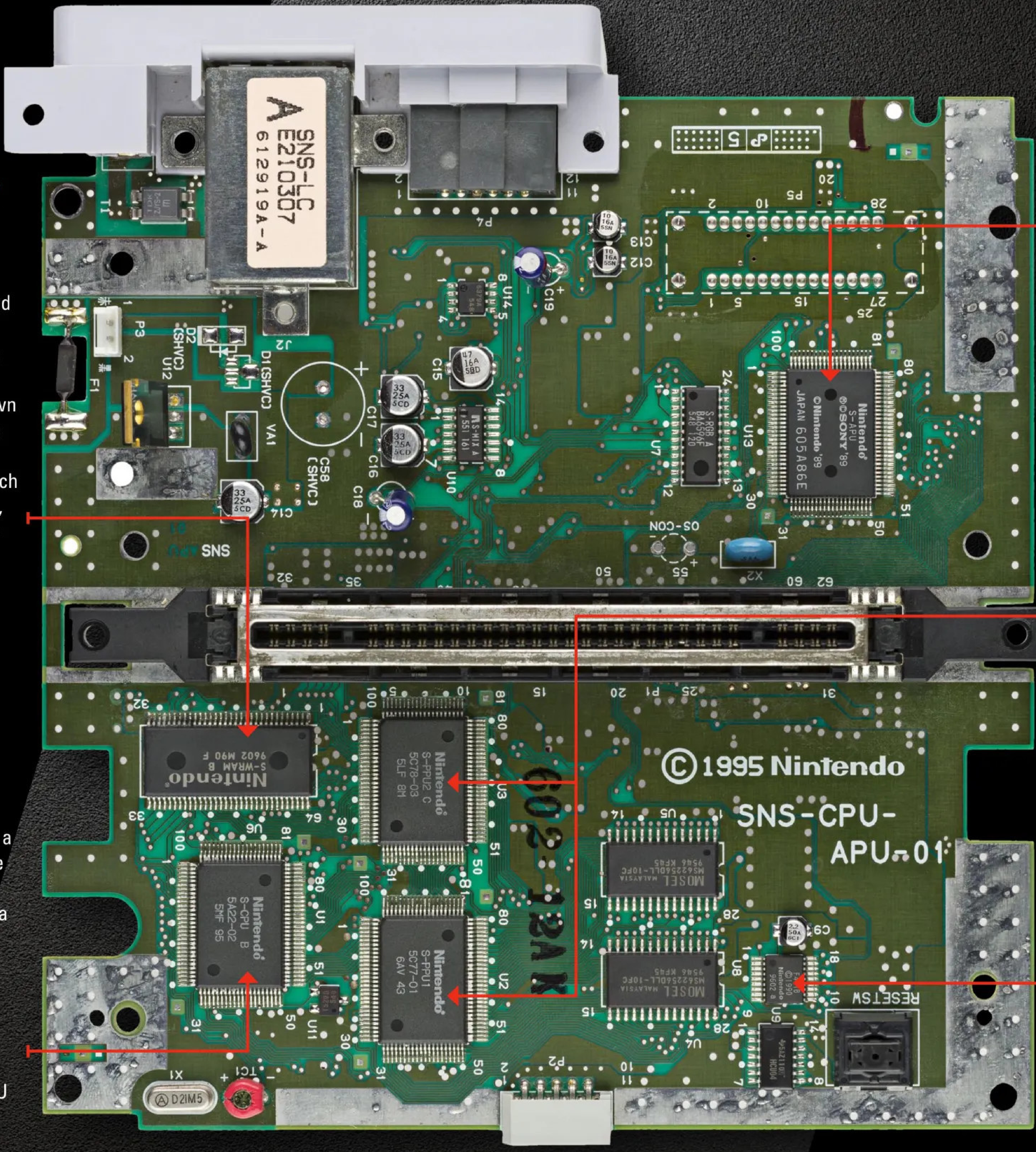
■ Working closely with his twin brother Chris, Tony provided art for games such as *Marko's Magic Football* and *Street Racer*, before the pair started West Racing.

PAL VERSION
EJECT
RESET
POWER
SUPER NINTENDO
ENTERTAINMENT SYSTEM
SELECT
START
X
A
Y
B

> WE WROTE ABOUT IT WITH A FAIR BIT OF HYPE AT THE TIME, IT MUST BE SAID, WITHOUT REALLY KNOWING THAT MUCH ABOUT IT OTHER THAN THE TECHNICAL SPECIFICATIONS
>
> JULIAN 'JAZ' RIGNALL

GET ON BOARD

A GUIDE TO THE CHIPS THAT MAKE UP THE SNES



S-WRAM

This is 128KB of working memory for the system, dedicated to storing program code. Graphical data and sound samples are stored in their own dedicated chips. The original spec for the console included much less RAM, just 32KB, which wouldn't have been enough.

S-CPU

The Ricoh 5A22 is a custom variant of the 16-bit WDC 65C816 CPU, with some extra functions. Existing Nintendo developers would have been comfortable moving to this CPU, as it is a relative of the MOS Technology 6502 CPU family that powered the NES.

S-APU

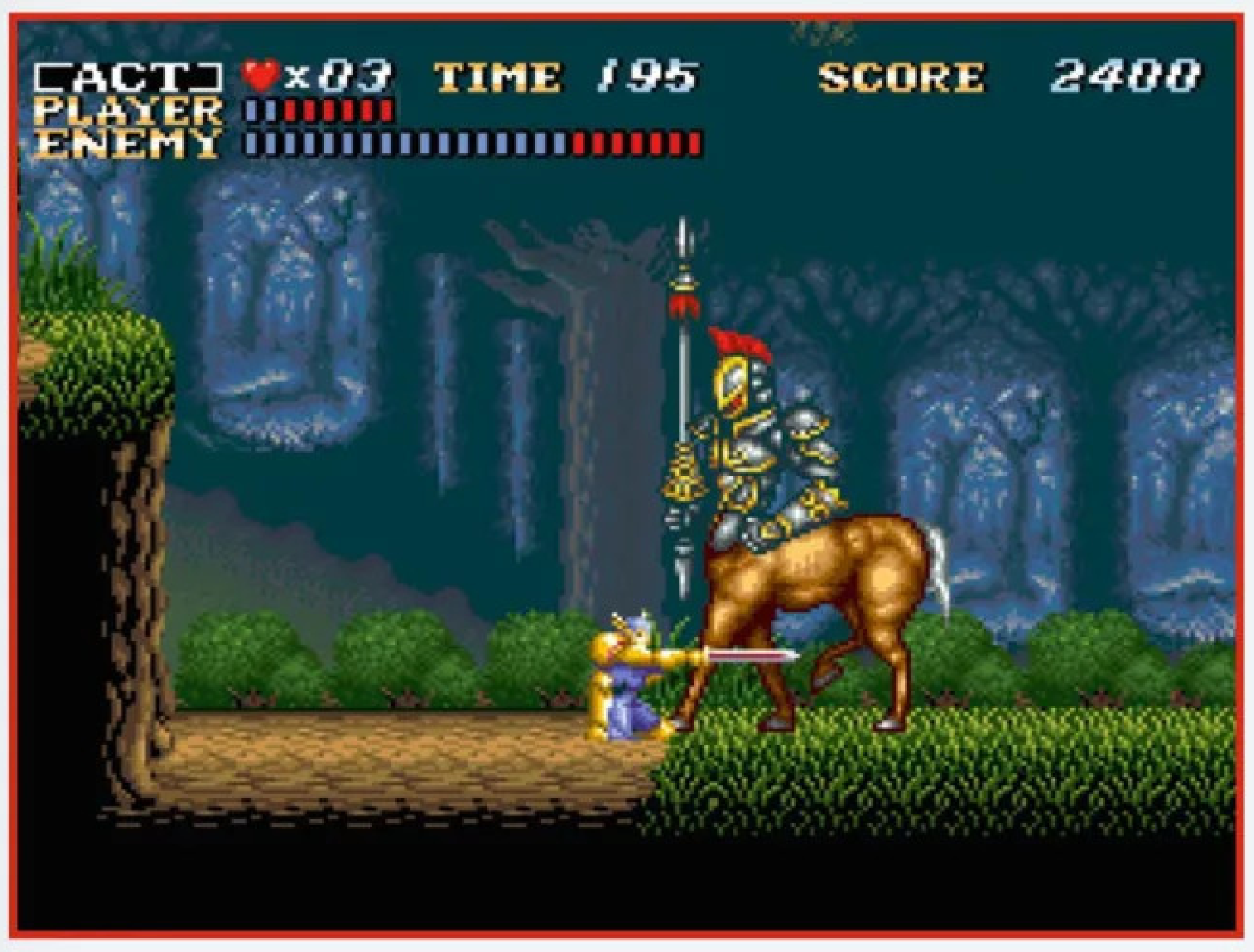
The audio hardware for the SNES. This was initially packaged as two main chips, the S-SPC and S-DSP, both of which were part of a separate circuit board. They were integrated into the main board in 1993, and combined into the S-APU chip in 1995.

S-PPU 1+2

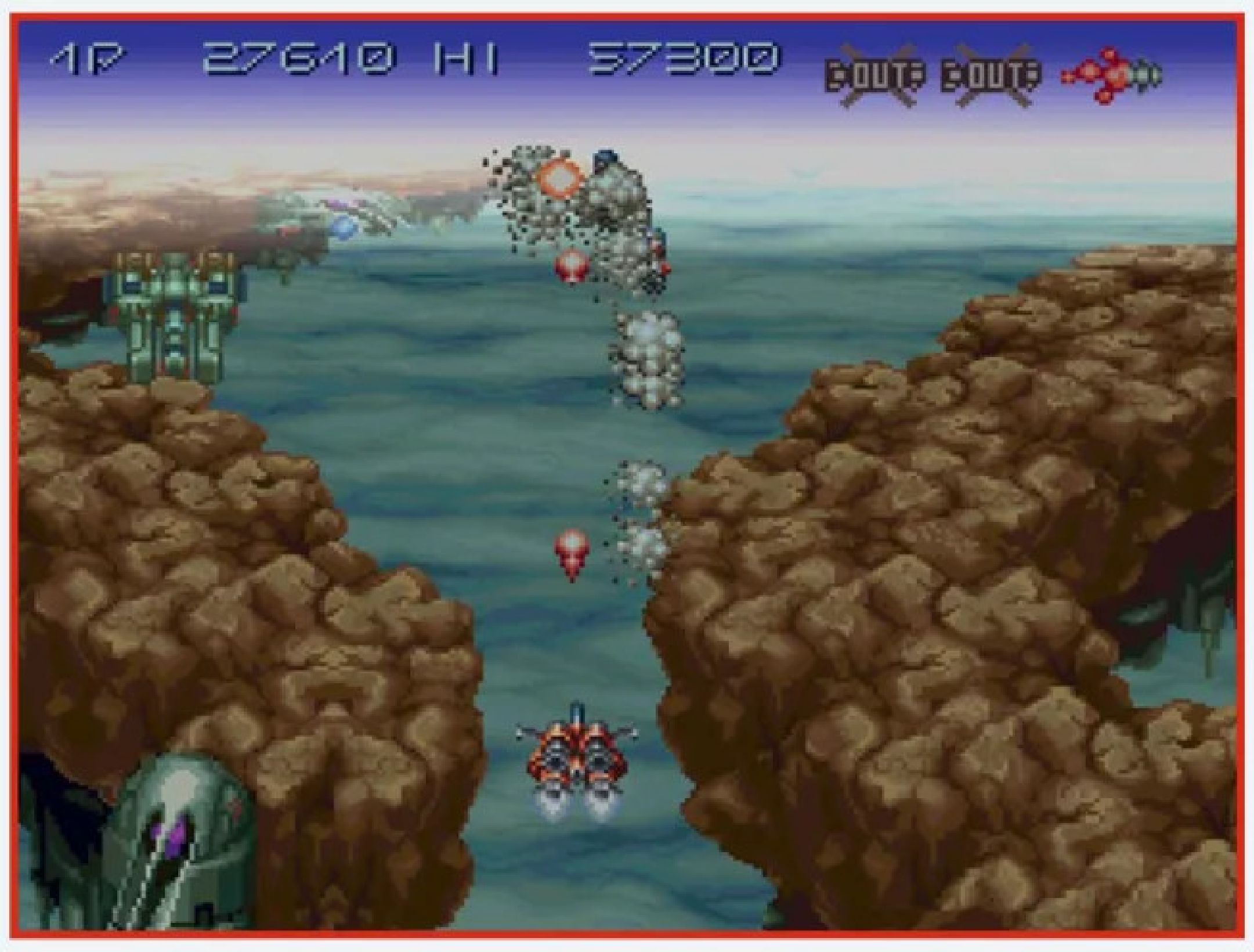
These two chips together form the custom video hardware of the SNES. To reduce cost and complexity, in 1995 these chips were combined with the CPU into a single chip named S-CPUN A. These 'one-chip' models are noted for their excellent RGB output.

CIC

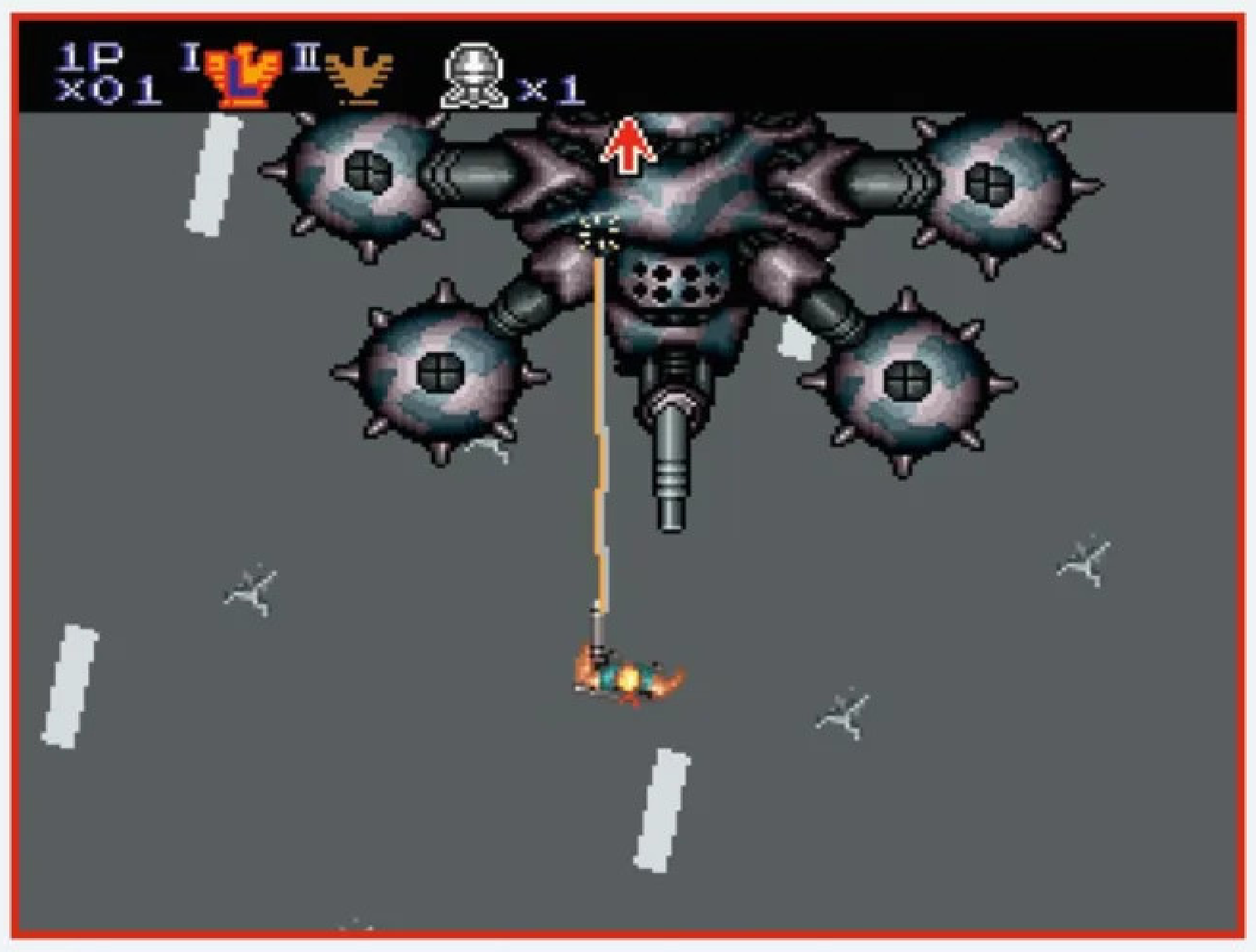
This is the lockout chip that prevents PAL games from running on NTSC consoles, and vice versa. The only thing preventing a Japanese NTSC game running on an American NTSC console is the shape of the cartridge, leading to very simple region mods.



» [SNES] *ActRaiser* was a fine-looking game, but the real treat was its orchestral audio by Yuzo Koshiro.



» [SNES] No shoot-'em-up had ever looked quite like *Axelay*, with the way its scenery rolls over the horizon.



» [SNES] In *Contra III*, Konami faked a second layer of rotation by using sprites to draw the ground and Mode 7 for the boss.

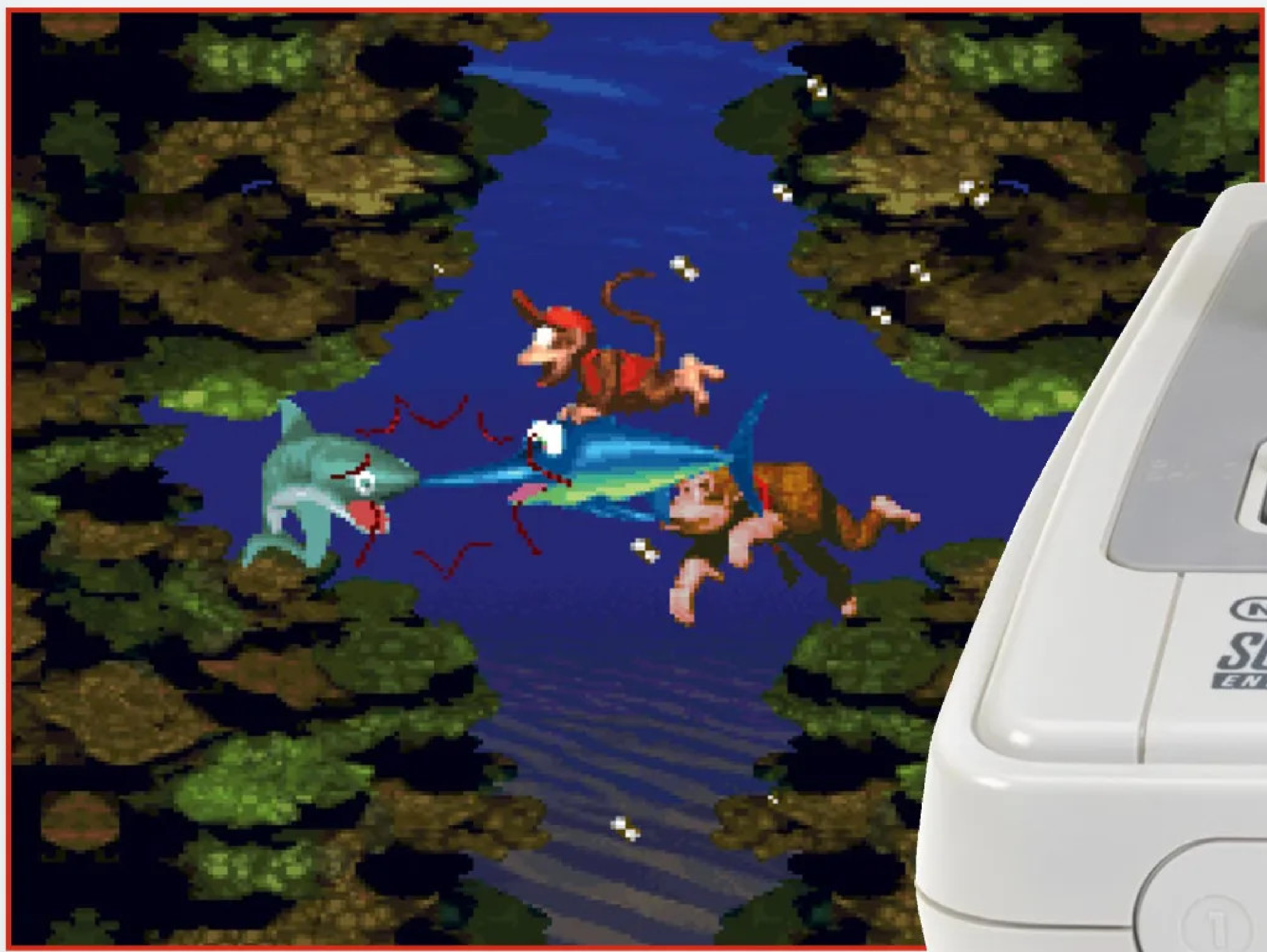
▶ In the late Eighties, Nintendo was the powerhouse of the videogames business. The Famicom had successfully conquered the Japanese market, and it had successfully exported the technology to the USA, reviving its console business following the crash of 1983. Like any company with a successful product on the market, Nintendo was not particularly keen on abandoning the NES, but the people at the top were aware of new technology on the horizon – mostly because Hudson Soft had initially tried to sell it to Nintendo. Having been turned down, Hudson joined forces with electronics giant NEC to launch the PC Engine in October 1987. The small, powerful machine captivated Japanese players, with over half a million units sold in just its first few months on the market. This coincided with a downturn in domestic Famicom sales, and while Nintendo was still the market leader, it clearly couldn't rest on its laurels. Late in September of 1988, Sega announced its 16-bit Mega Drive, just a month ahead of its October release. If Nintendo didn't show its hand soon, there was a real chance that players would drift to these new machines.

In November 1988, Nintendo invited hundreds of members of the Japanese press to its announcement of its new 16-bit console – the Super Famicom. Not long after, it found its way into *Computer & Video Games* courtesy of Julian 'Jaz' Rignall. "We used to buy Japanese magazines from a shop near St Paul's [Cathedral], near to where our offices were. We'd buy these magazines every month for the most part just to see what was happening on the Mega Drive and PC Engine, those were the most popular consoles at the time. We bought some one month and lo and behold, there were some pictures of the Super Famicom," he recalls. "We got the news stories translated and turned them into news pieces for *CVG*, and we published the first pictures in the UK – which were literally snipped out of a Japanese magazine with scissors."

This early showing confirmed many of the technical details of the SNES, including its 16-bit CPU, its support for 256 simultaneous colours on-screen, its eight background modes with larger sprites and its custom sound system. The system's most impressive technical capability was its ability to rotate and scale backgrounds, shown off via a flight simulation demonstration. A new controller was also shown, featuring four face buttons in a diamond configuration and two shoulder buttons. One thing the console wouldn't support was backwards compatibility, though at this stage the system sported an AV input that the new 'Famicom Adapter' console model could be routed through. No games were shown, but it was made clear that a fourth *Super Mario Bros* and a third *Zelda* were in development.

> "WE GOT THE NEWS STORIES TRANSLATED AND TURNED THEM INTO NEWS PIECES FOR CVG, AND WE PUBLISHED THE FIRST PICTURES IN THE UK – WHICH WERE LITERALLY SNIPPED OUT OF A JAPANESE MAGAZINE WITH SCISSORS"
>
> **JULIAN 'JAZ' RIGNALL**

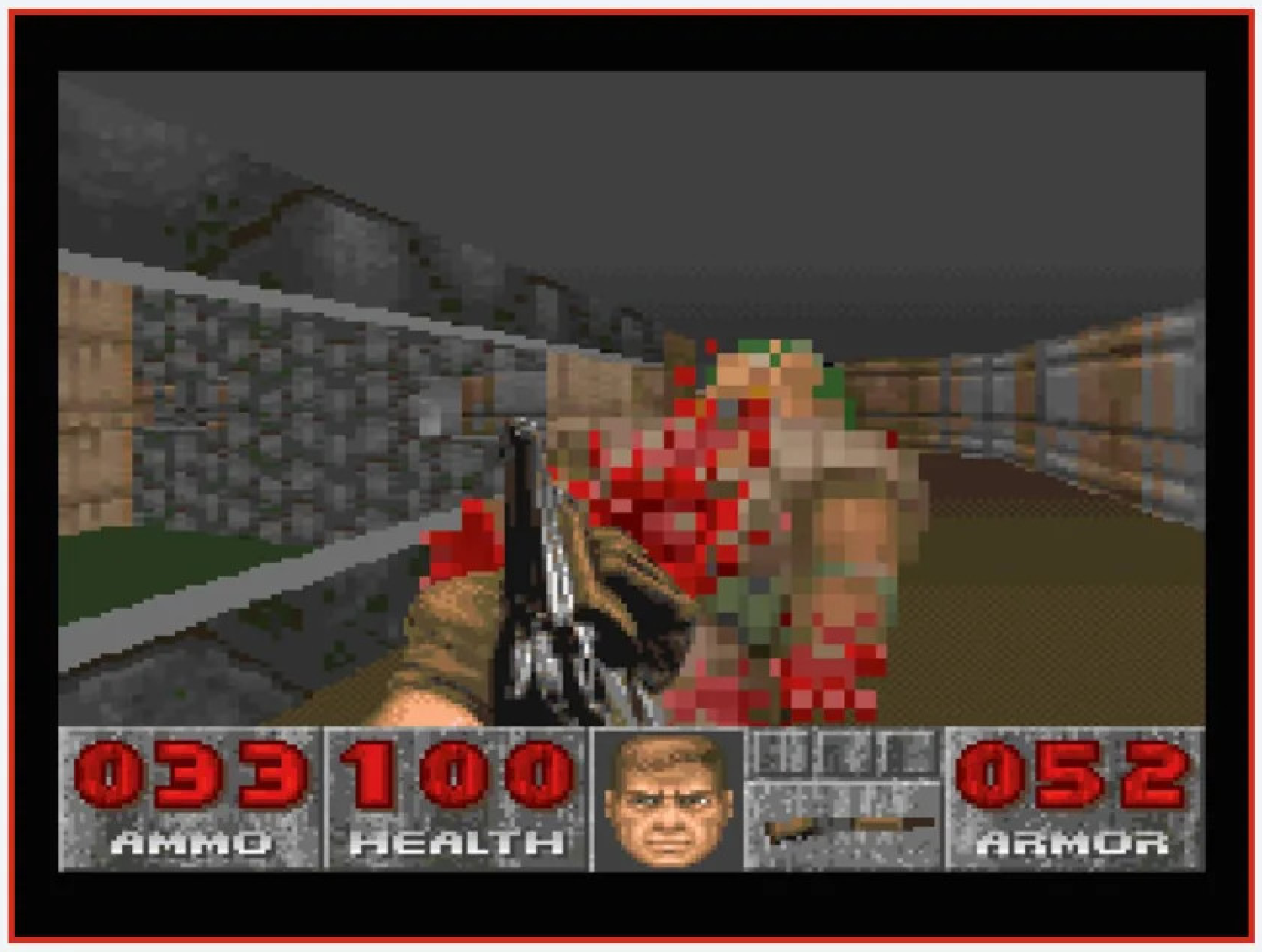
When the Super Famicom was shown off again in July 1989, it was close ▶



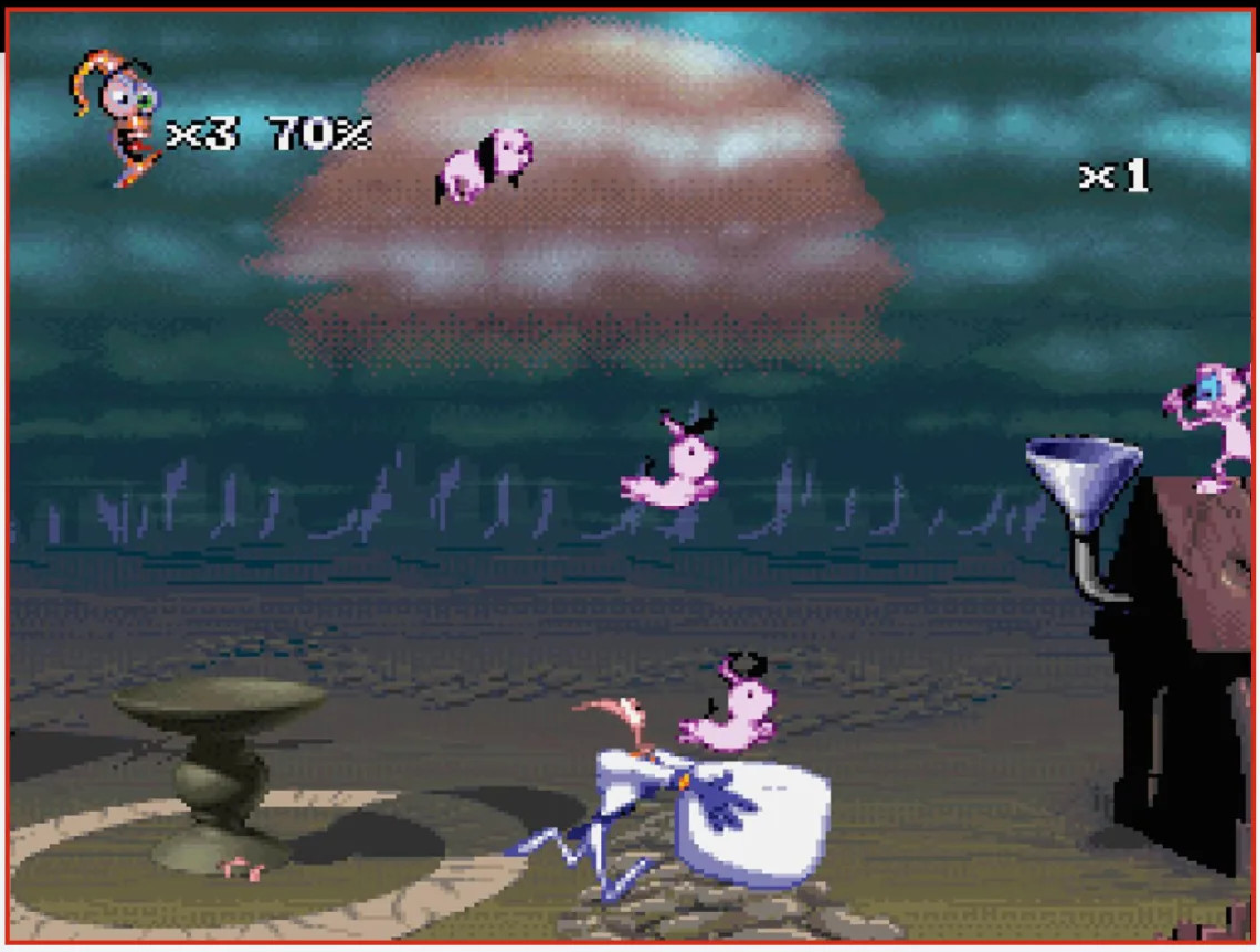
» [SNES] *Donkey Kong Country* looked simply stunning in 1994 and contributed to extending the life of the SNES.

Nintendo
SUPER MARIO KART
SUPER NINTENDO ENTERTAINMENT SYSTEM
PAL VERSION
POWER
EJECT
RESET
Nintendo
SUPER NINTENDO ENTERTAINMENT SYSTEM

» *Super Mario Kart* built on *F-Zero's* racing potential and provided some unmissable multiplayer antics.



» [SNES] If you're a programmer looking for further insight into SNES *Doom*, the source code is available at: github.com/RandalLinden/DOOM-FX.



» [SNES] Nick Jones had to change how this scene was drawn at the last minute due to a hardware bug.

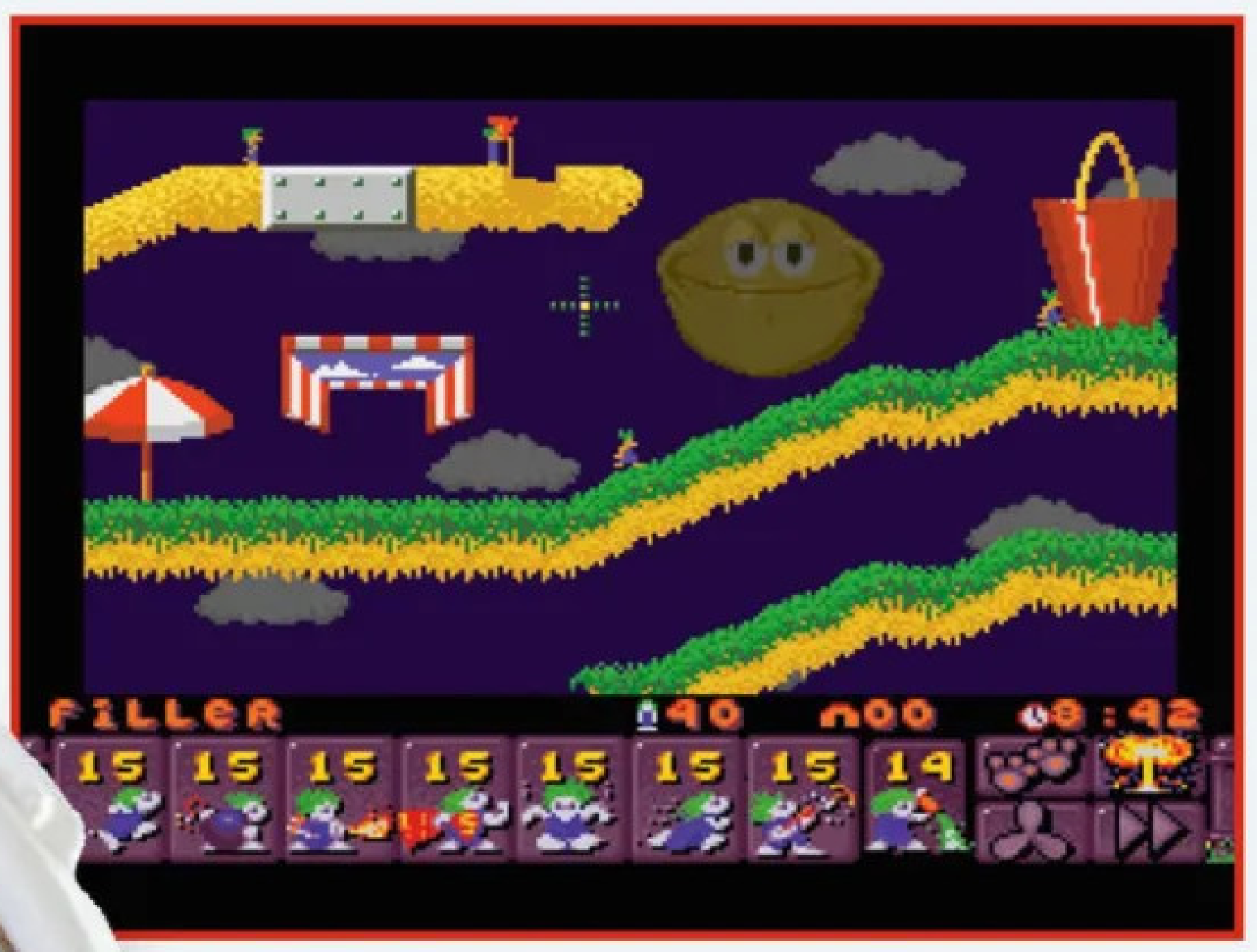
▶ to complete. The case design was much closer to the final, with the notable differences including an extension port on the front of the console with the control ports, a headphone jack on the right of the console and a red power switch. The AV inputs for looping the Famicom Adapter through had been dropped, too. The specifications were also basically the same as the final machine, with the exception of its work RAM which was just 32KB compared to 128KB in the final machine. This time, games were shown off, too. *Super Mario 4* was in a very early state, with a mushroom-shaped world map and plenty of *Super Mario Bros 3* elements that wouldn't survive development, while that initial flight simulator demo had morphed into *Dragonfly*, a sci-fi flight game. But what would have seemed most surprising at the time was that the console was still at least a year away. While Nintendo doubtless wanted to perfect its own games, which were still in a very early state, it had also struggled to satisfy software demand in the early days of the Famicom. By allowing third-party developers plenty of time to prepare their own games for launch, it would not have the same problems this time.

In the days before globalisation and the internet had taken hold of society, such showings were for the domestic market only as Nintendo could enact region-specific plans as it saw fit. This meant that marvelling at the screenshots was as close as Jaz got to the machine. "That's all that we had at the time, was the screenshots. But we were very excited – we trusted Nintendo, we thought the machine would be pretty awesome, so we were already getting really excited about it." The *CVG* team passed this excitement on to the readers. "We wrote about it with a fair bit of hype at the time, it must be said, without really knowing that much about it other than the technical specifications." This approach worked, though – as did Nintendo's slow approach to delivering the console. When the Shoshinkai show of August 1990 rolled around, plenty of Super Famicom software was available to see. Third parties brought the likes of *Final Fight*, *Gradius III* and *R-Type II*, while Nintendo provided the newly named *Super Mario World*, as well as the futuristic racer *F-Zero* and computer adaptation *SimCity*.

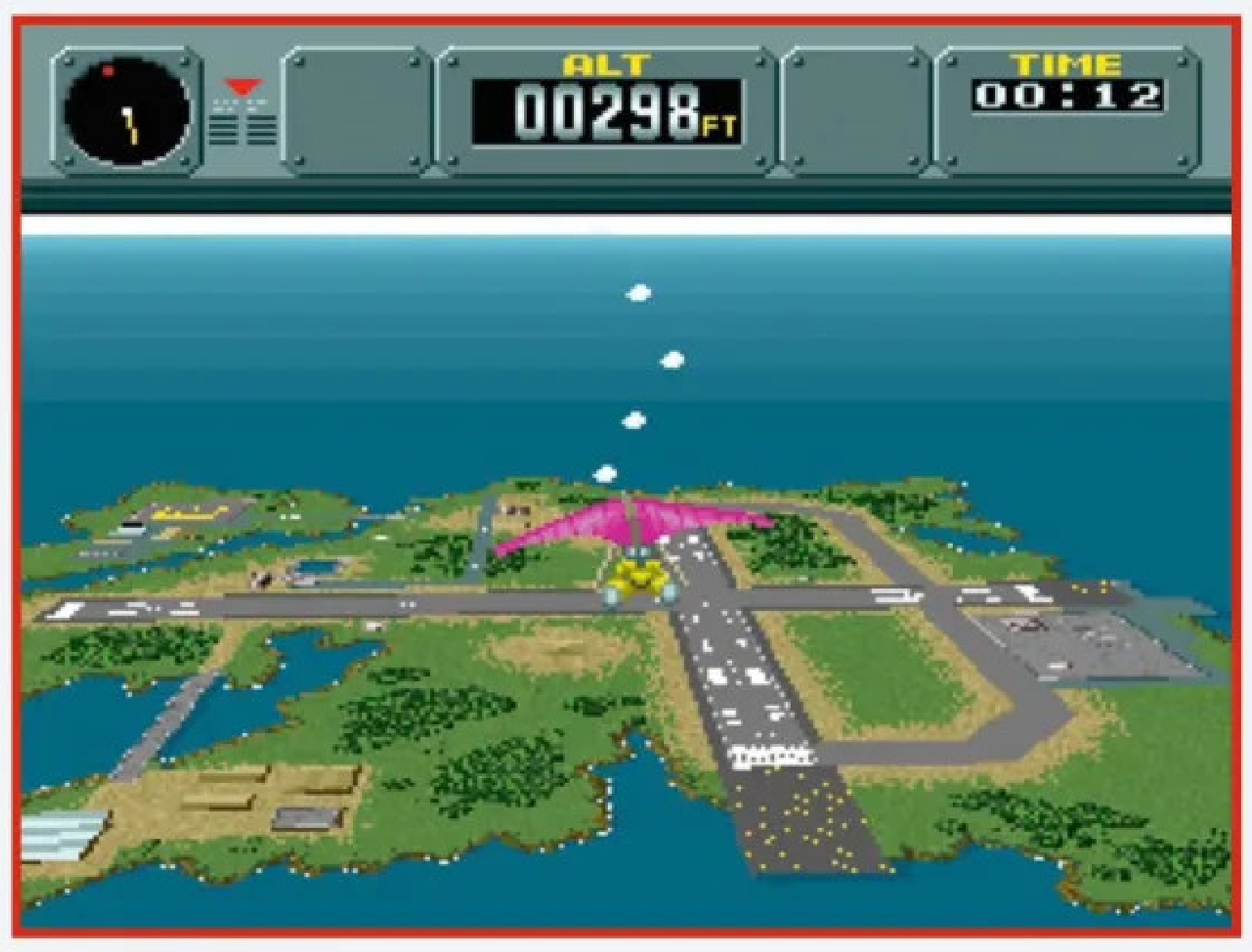
In November 1990, the Super Famicom launched in Japan to enormous demand, and Jaz was one of the first in the UK to get access to the new console on import. "Everybody wanted to look at *Super Mario World*, we didn't know much about *F-Zero*. I just remember the entire office stopping and piling into the games room to watch the games being played, and it not disappointing." Part of the reason for going straight to *Mario* was that screenshots couldn't convey the strength of the console's signature ability. "We had no idea what was coming – we didn't really see Mode 7 until we received the machine," he recalls. "One of the games that we had with it was *F-Zero*. We were absolutely blown away by it, it was just an amazing graphical achievement at the time." Unsurprisingly, the Super Famicom was an instant hit in Japan. Nine months later in August 1991 it hit North America, rebranded as the Super Nintendo Entertainment System and redesigned with a boxier grey-and-purple look. UK gamers thankfully got the original Japanese look with the American name, but experienced Europe's traditional slow 50Hz conversions and long waiting times, with the system finally arriving in April 1992.

> FINAL FIGHT WAS A POPULAR ARCADE GAME WITH HUGE SPRITES AND SEEING THAT COME TO LIFE IN A VERY AUTHENTIC VERSION WAS REALLY COOL. THAT WAS SOMETHING THAT WE GOT EXCITED ABOUT WHEN WE REVIEWED IT
>
> JULIAN 'JAZ' RIGNALL

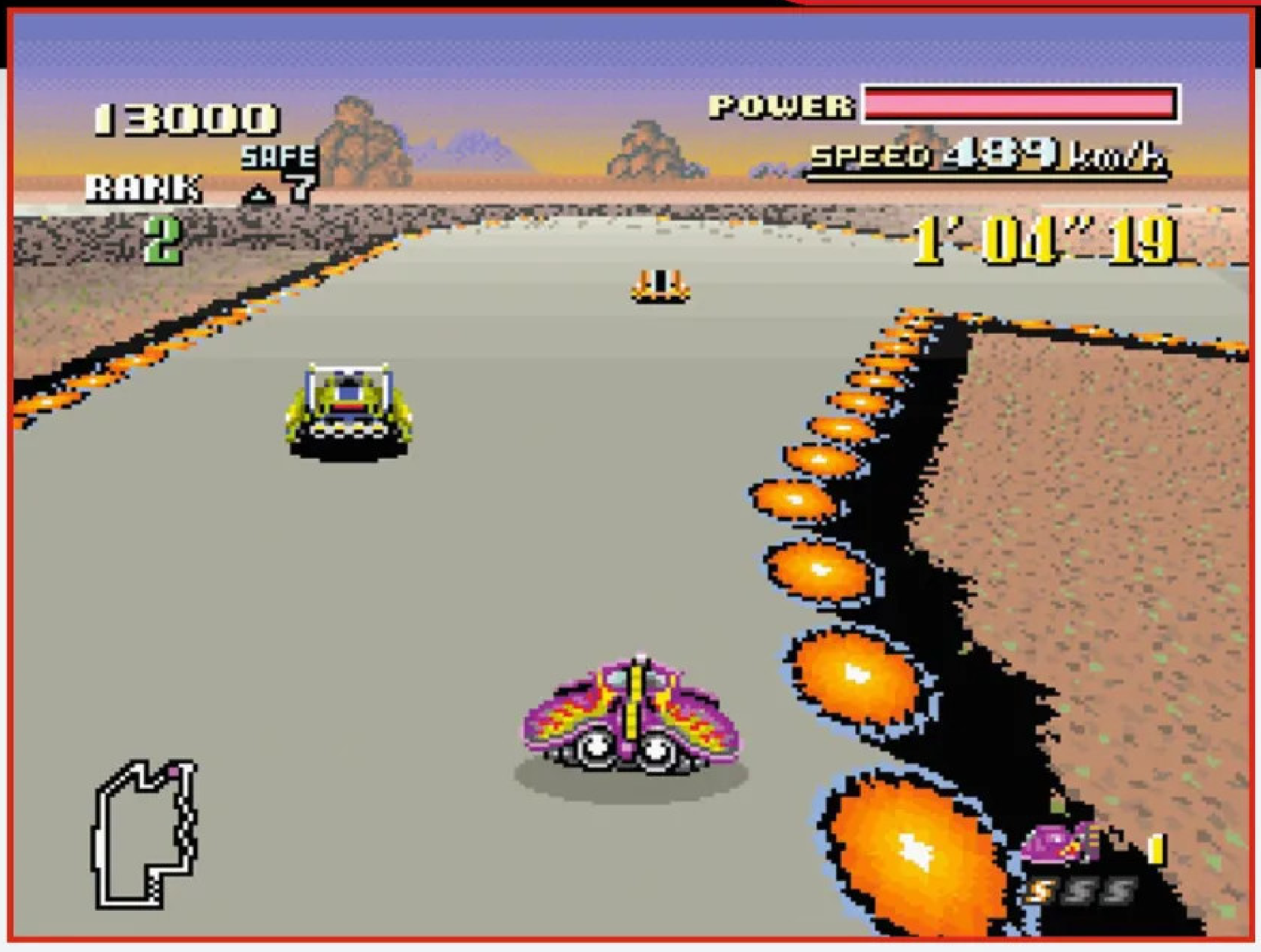
SUPER NINTENDO
ENTERTAINMENT SYSTEM
SELECT
START
X
Y
A
B



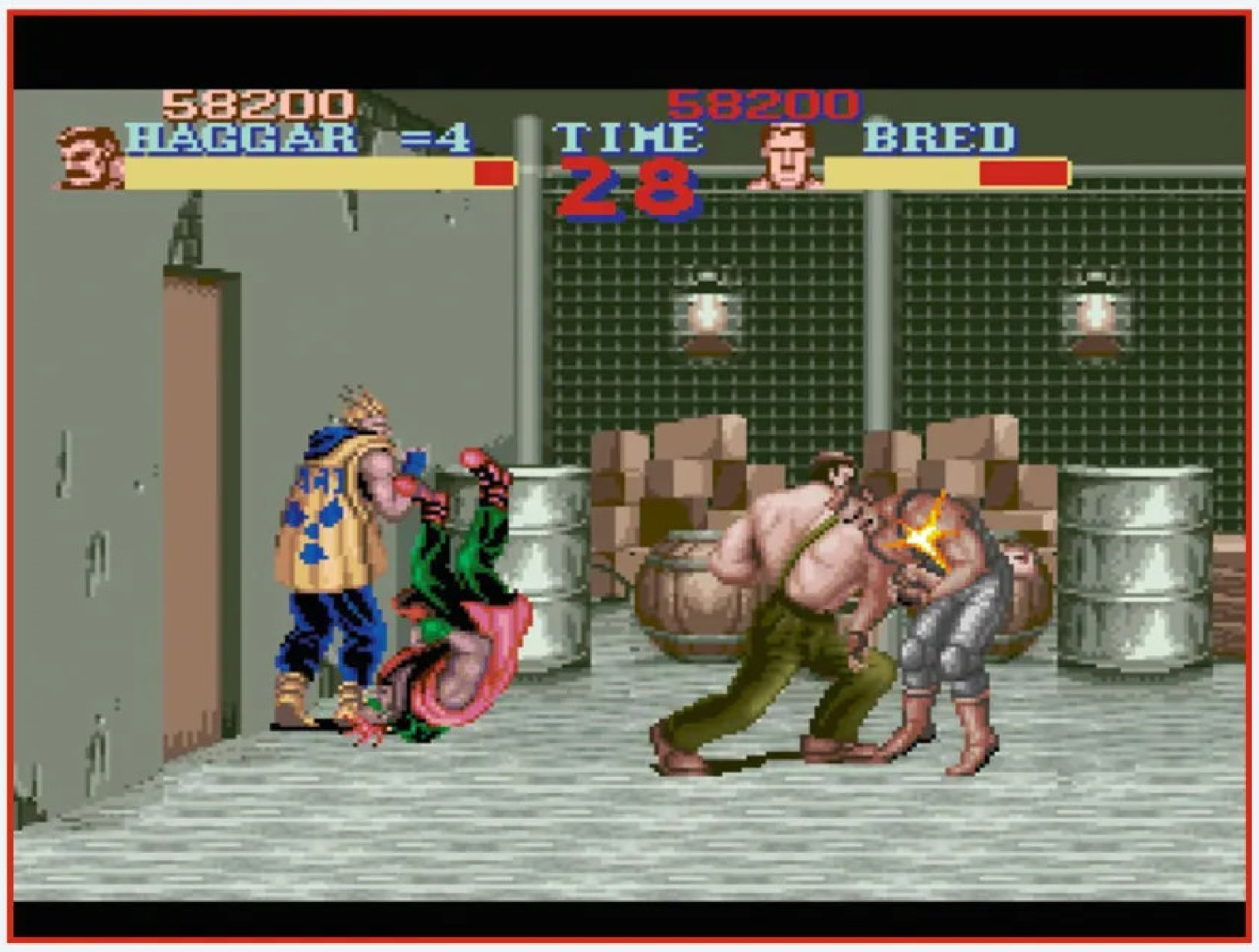
» [SNES] Mike describes *Lemmings 2* as one of the most technical games he's ever done, despite a console focus.



» [SNES] *Pilotwings* was one of the first SNES games seen, and would be the first to use an enhancement chip.



» [SNES] *F-Zero* was an early demonstration of just how Mode 7 set the SNES apart from every other system available.



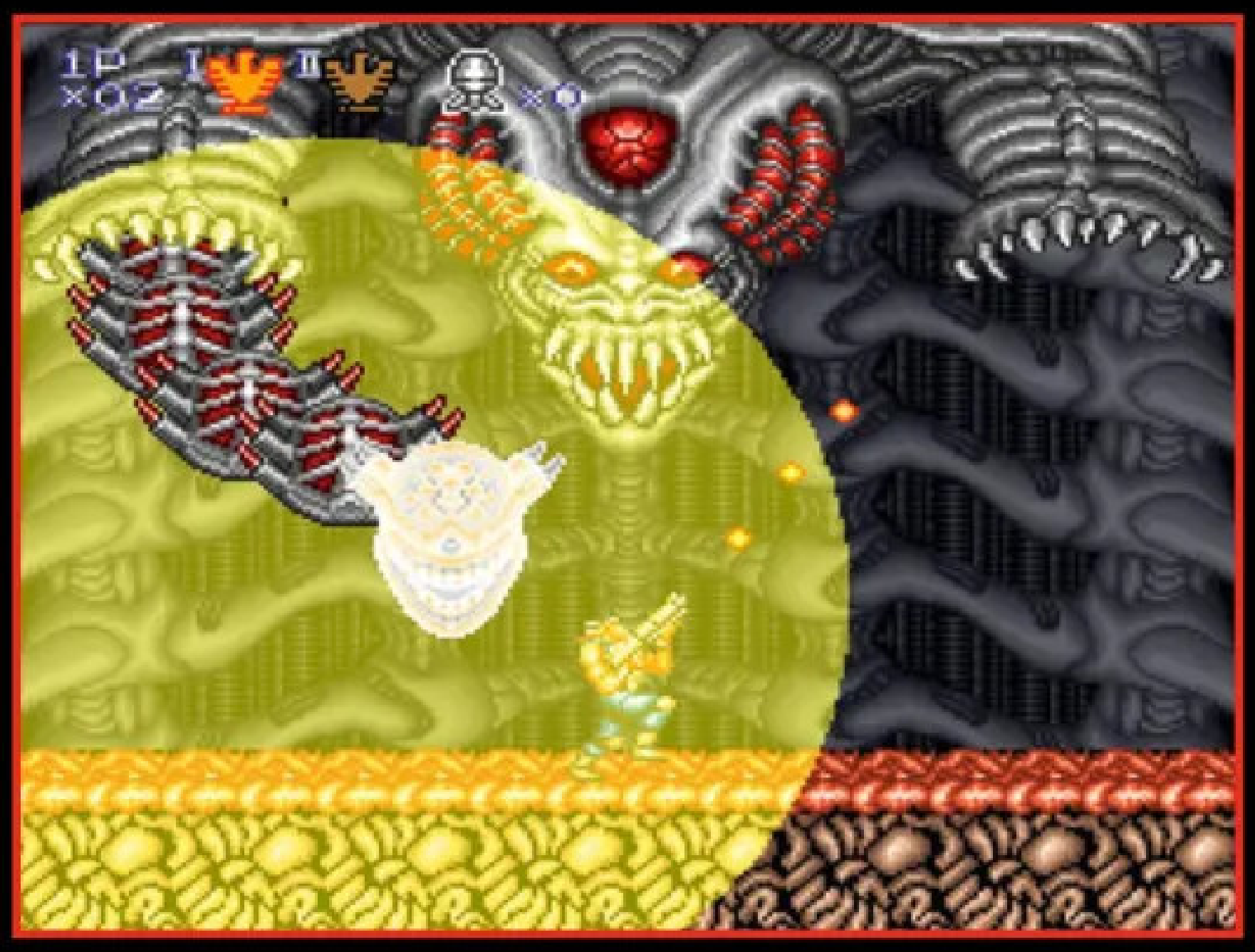
» [SNES] *Final Fight* was a strong conversion, despite lacking both a main character and the multiplayer mode.

As the games started rolling in, players had plenty of new reasons to be impressed with the console. "*Final Fight*, that was definitely a huge game," says Jaz. "It was a popular arcade game with huge sprites and seeing that come to life in a very authentic version was really cool. That was something that we got very excited about when we reviewed it." Other favourites were very polished examples of tried-and-true archetypes. "*F1 Exhaust Heat* was another early Mode 7 game that I remember getting really excited about, because it was more of a 'racing car' racing game – I've always been a fan of more traditional racing games," Jaz remembers. "*UN Squadron* was a nice, slick shoot-'em-up that played well and was graphically impressive, even though at the time we were getting a little bit tired of all the horizontally scrolling shoot-'em-ups."

For Nick Jones of Visual Concepts, who was already a veteran coder at the time, *Contra III* was the game that really proved impressive. "I remember playing that for the first time. I was just blown away with how the game kept changing. They didn't have just the traditional 'scrolling background', they sought to make the background interactive. I remember one of the bosses where it ripped open the background and the boss was in the distance. Very creative," he remembers.

TECH TRICKS

THE SPECIAL EFFECTS THAT THE SNES WAS BUILT TO PERFORM

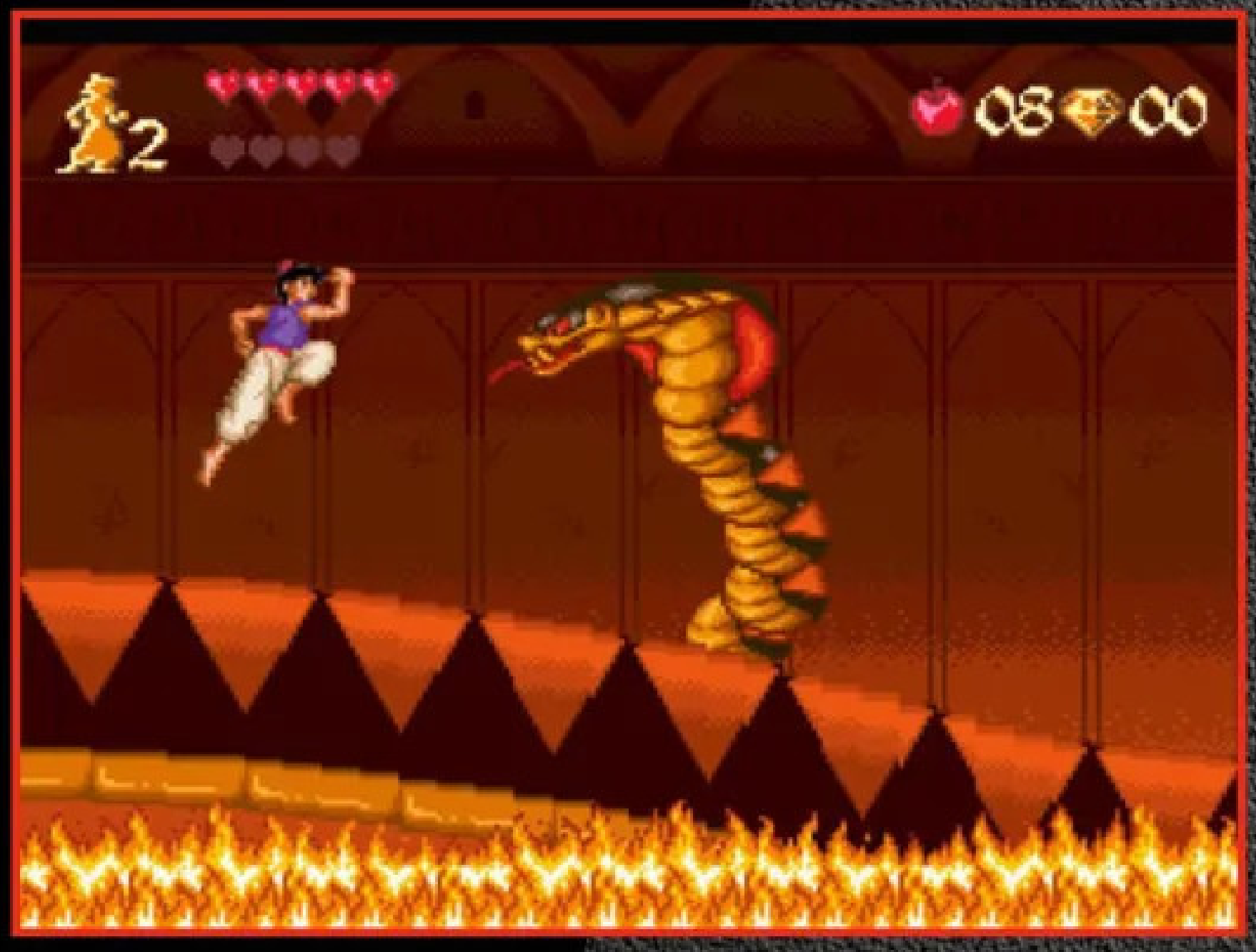


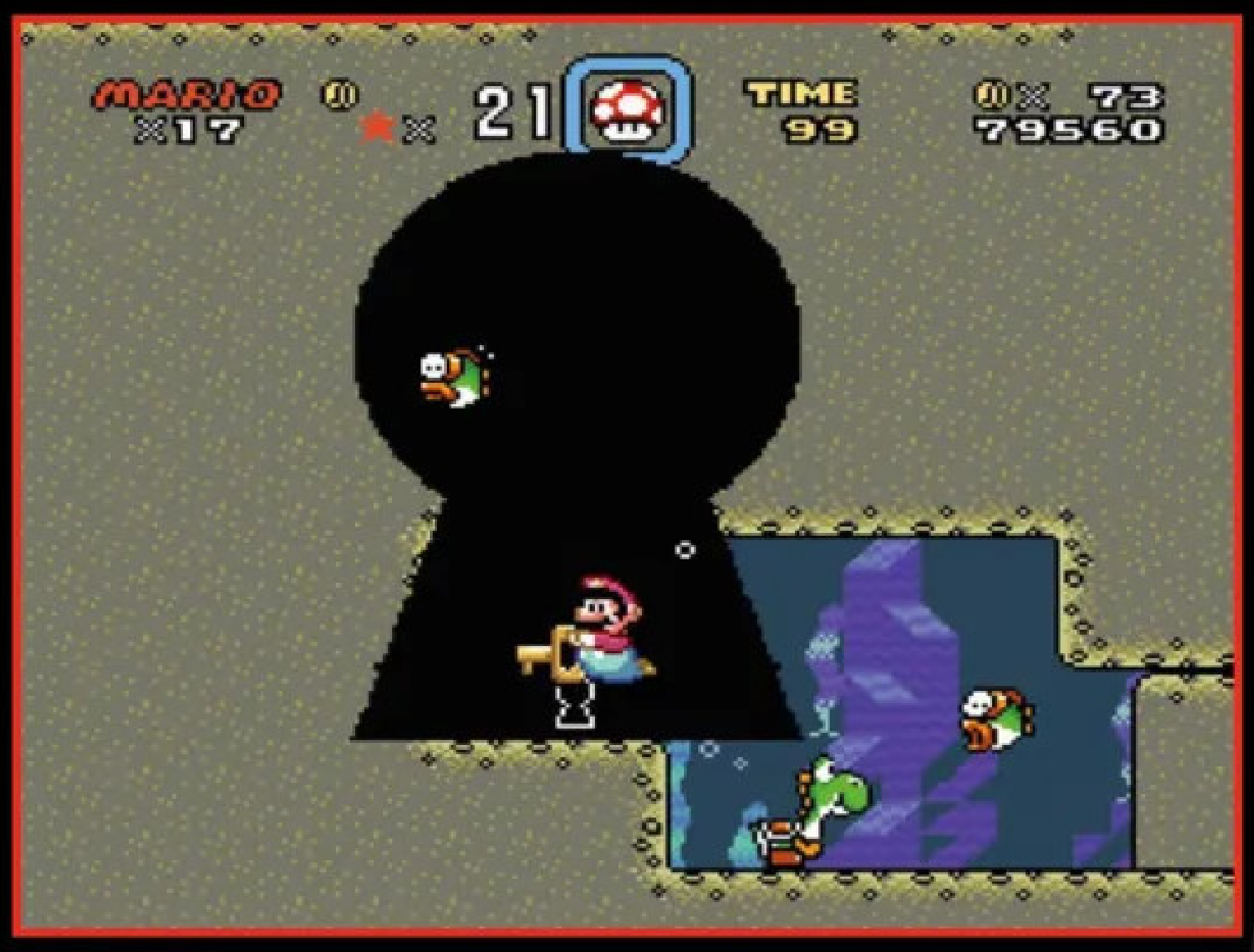
COLOUR BLENDING

Nintendo's hardware is capable of performing mathematical operations between pixels on different layers, in order to produce transparency effects.

OFFSET PER TILE

This effect allows pixels to be shifted up and down in eight-pixel-wide columns, producing effects like the undulating snake body in *Aladdin*'s final boss fight.



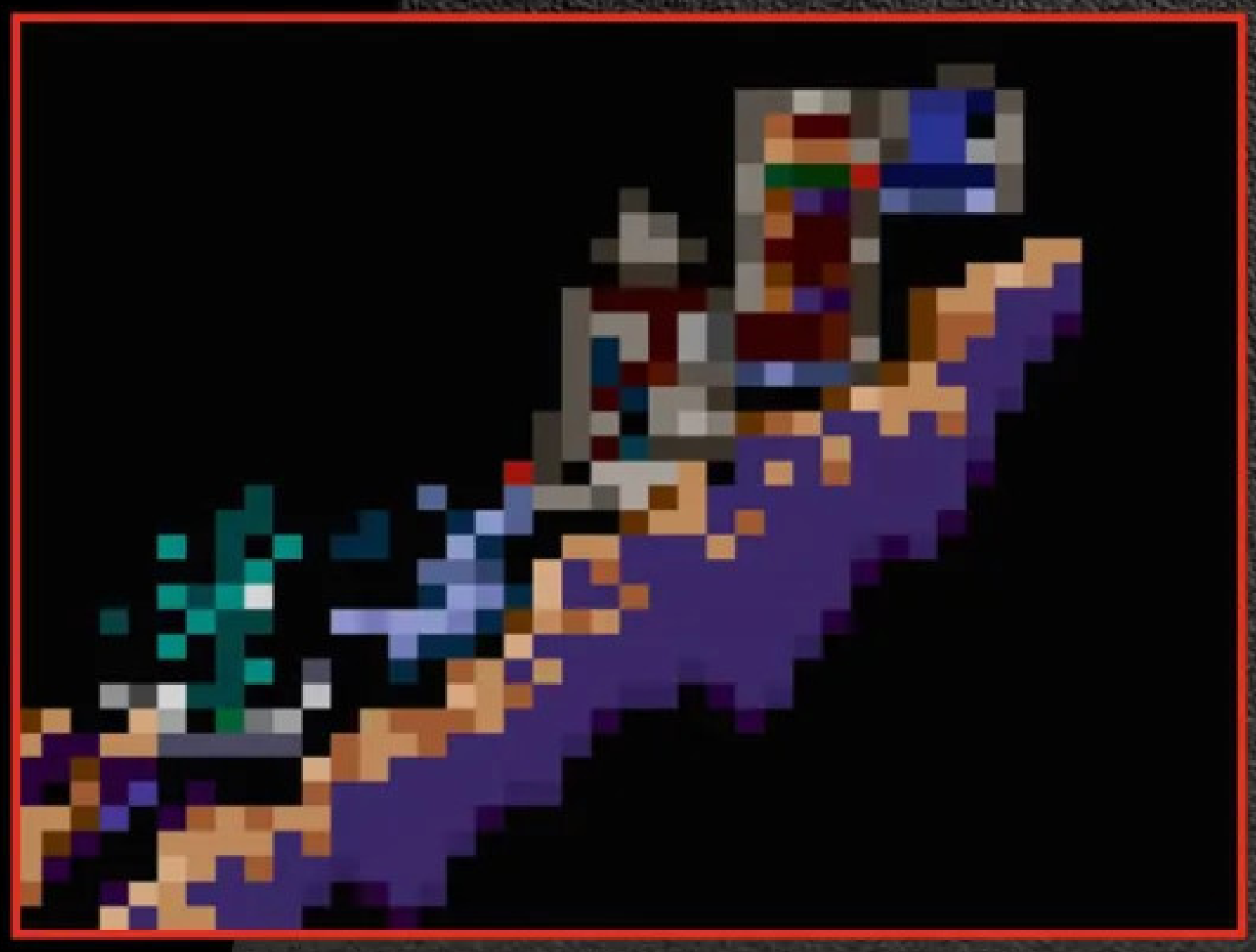


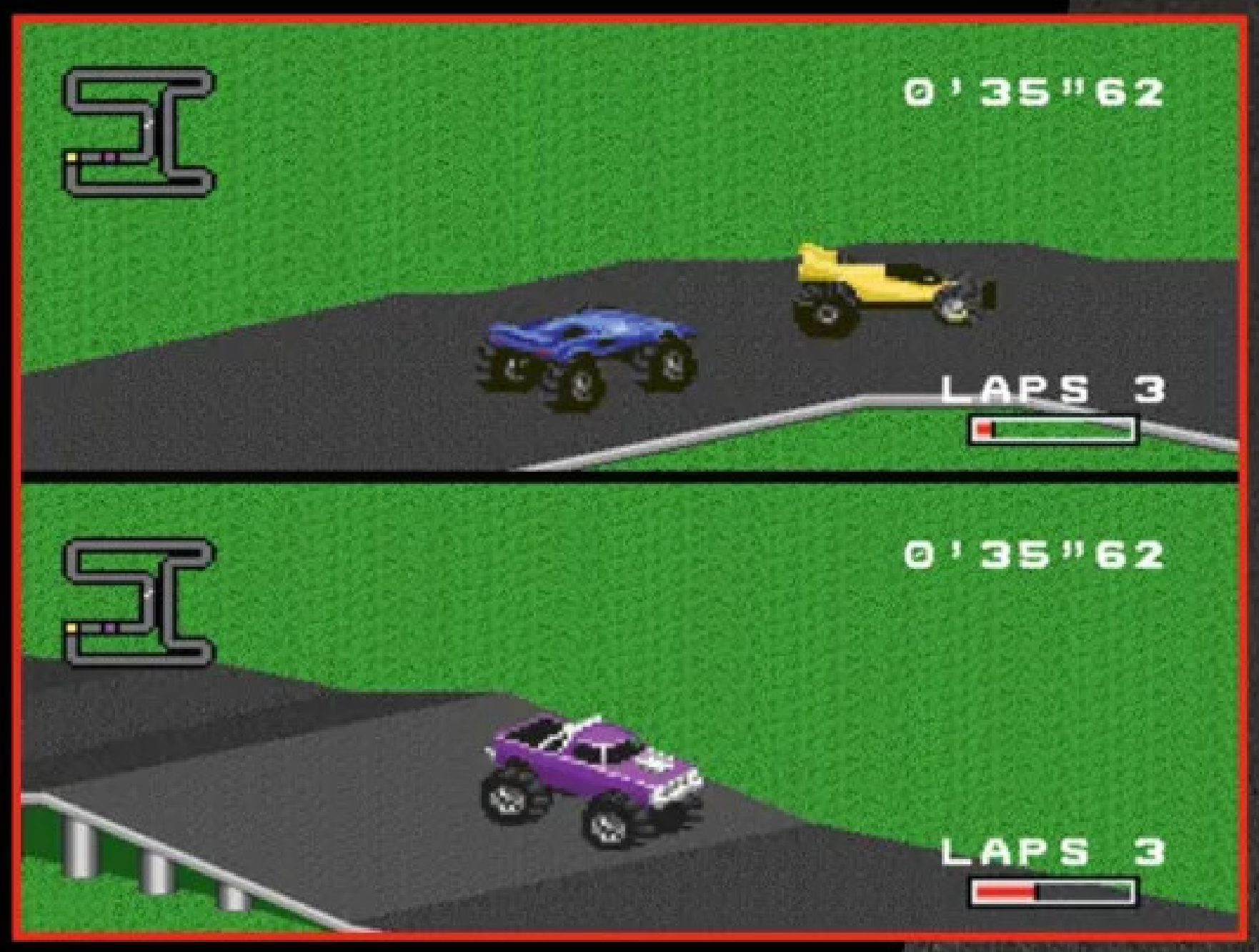
WINDOWING

The SNES can selectively choose not to draw certain regions of a screen, across any combination of layers. Funky shapes are achieved with DMA instructions.

MOSAIC

You know how some people's faces get pixelated on TV for privacy reasons? The SNES can do that to any of your background graphics, and often does.





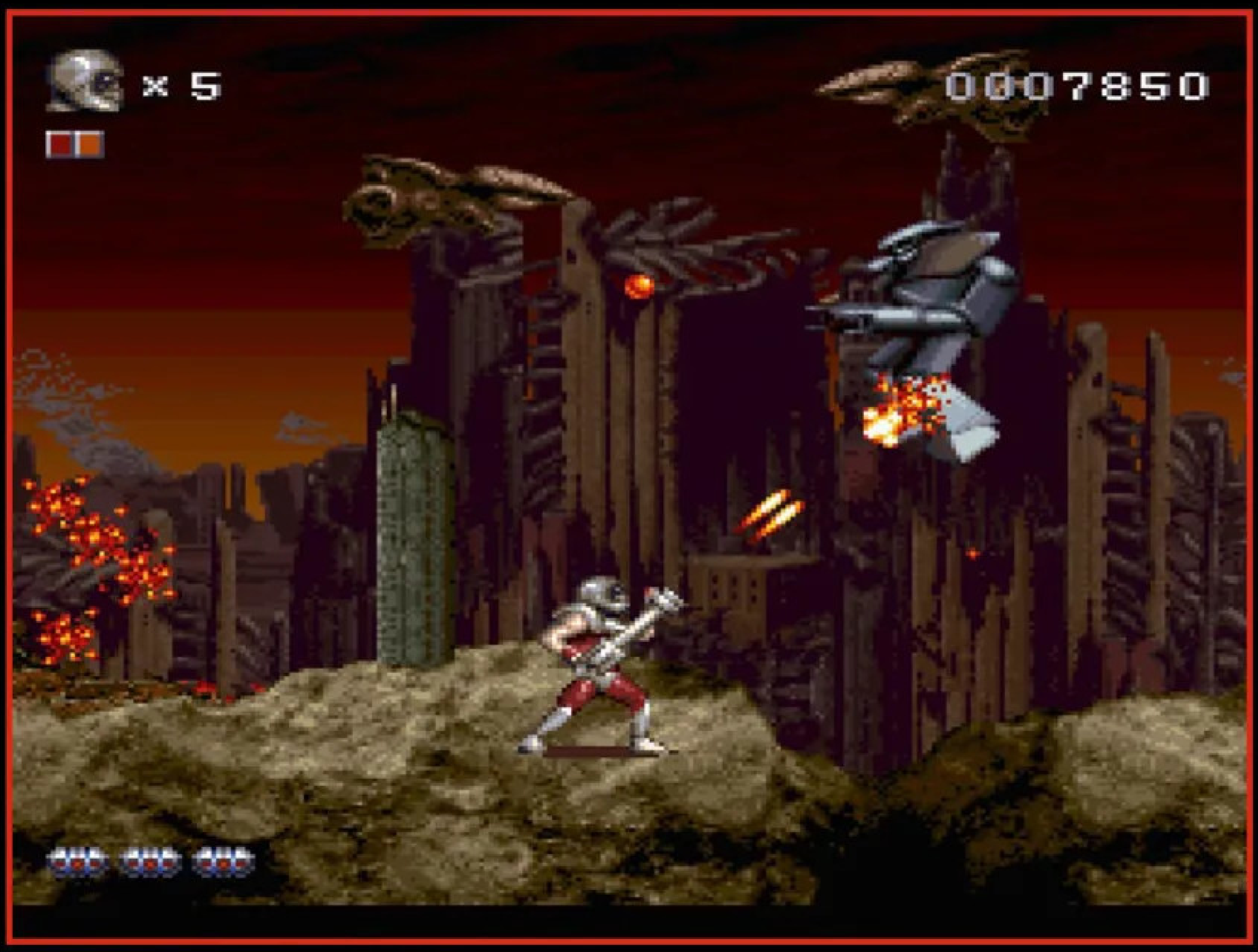
HIGH RESOLUTION

It's possible to run the SNES in a 512x448 interlaced mode for increased detail. Very few games ever did this, with *RPM Racing* being one of them.

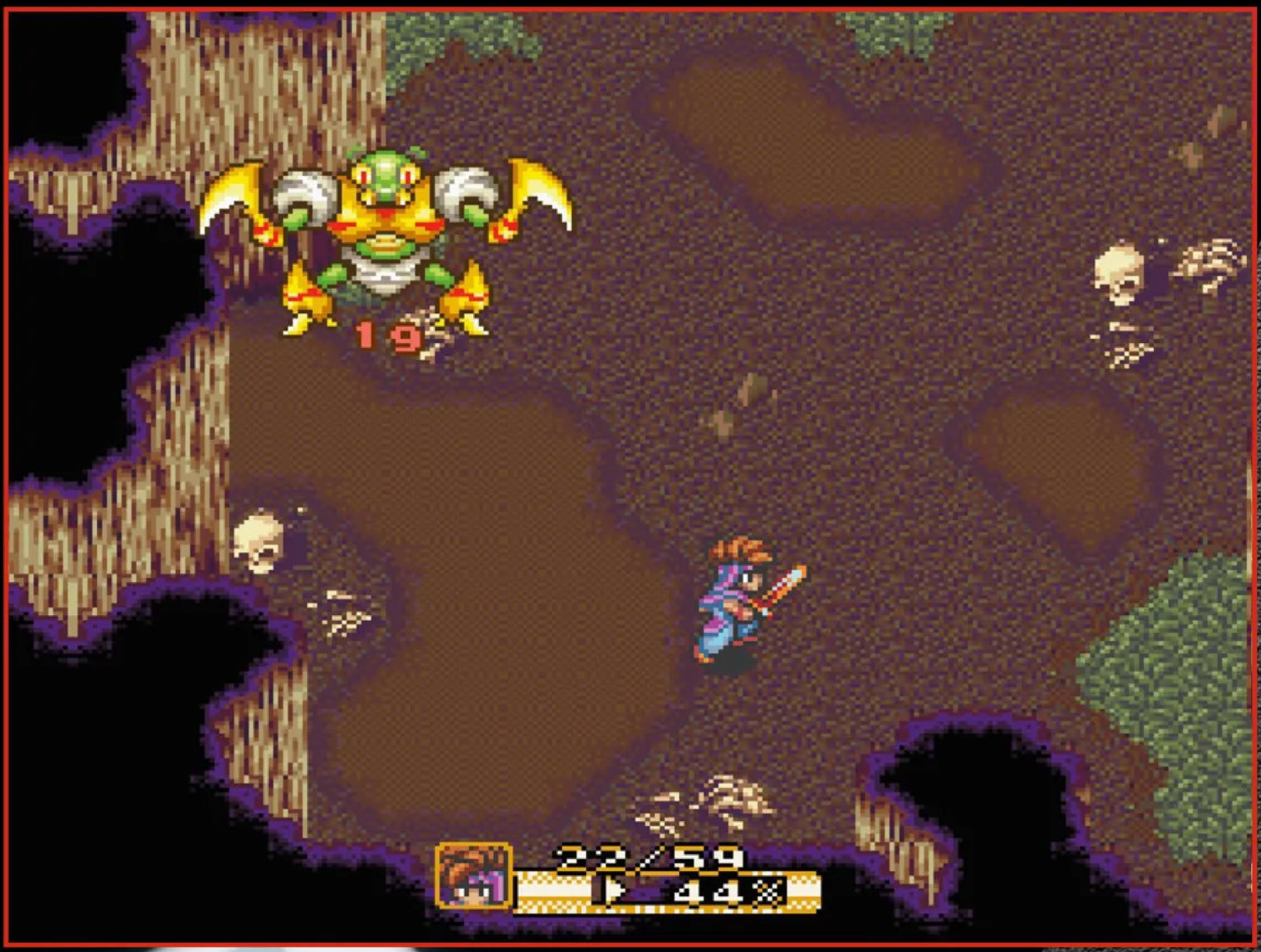
A LA MODE

EVERYONE KNOWS ABOUT MODE 7, BUT WHAT BENEFITS DO MODES 0-6 GIVE YOU? HERE'S A HANDY GUIDE TO NINTENDO'S FLEXIBLE FRAME CONSTRUCTION METHODS

	BACKGROUND 1	BACKGROUND 2	BACKGROUND 3	BACKGROUND 4	MOSAIC	WINDOWING	COLOUR BLENDING	OFFSET PER TILE	DIRECT COLOUR MODE	TRUE HIGH RESOLUTION
Mode 0	Four-colour palettes (up to 32 unique colours)	Four-colour palettes (up to 32 unique colours)	Four-colour palettes (up to 32 unique colours)	Four-colour palettes (up to 32 unique colours)	ON	ON	ON	OFF	OFF	OFF
Mode 1	16-colour palettes	16-colour palettes	Four-colour palettes	Inactive	ON	ON	ON	OFF	OFF	OFF
Mode 2	16-colour palettes	16-colour palettes	Inactive	Inactive	ON	ON	ON	ON	OFF	OFF
Mode 3	256-colour palette	16-colour palettes	Inactive	Inactive	ON	ON	ON	OFF	ON	OFF
Mode 4	256-colour palette	Four-colour palettes	Inactive	Inactive	ON	ON	ON	ON	ON	OFF
Mode 5	16-colour palettes	Four-colour palettes	Inactive	Inactive	ON	ON	ON	OFF	OFF	ON
Mode 6	16-colour palettes	Inactive	Inactive	Inactive	ON	ON	ON	ON	OFF	ON



» [SNES] The SNES was particularly well-suited to prerendered 3D in games like *Rendering Ranger* due to its wide colour palette.



» [SNES] Mike cites *Secret Of Mana* as one of the SNES titles he was impressed by, due to the quality of the pixel art.

SUPER NINTENDO
ENTERTAINMENT SYSTEM
SELECT
START
X
Y
A
B

> THE SNES AND NES ARE VERY SIMILAR AS FAR AS OVERALL DESIGN; THEY BOTH FEATURE A CPU THAT'S 6502-BASED AND HAVE SEPARATE PPU AND SPU PORTIONS OF THE HARDWARE
>
> RANDY LINDEN

SUPER NINTENDO
F-ZERO
Nintendo
POWER
EJECT
RESET
SELECT
START
X
A
Y
B

» The SNES pad built on the NES design and added in two extra face buttons as well as two extras inputs on the top – features that we can still see in controllers today.

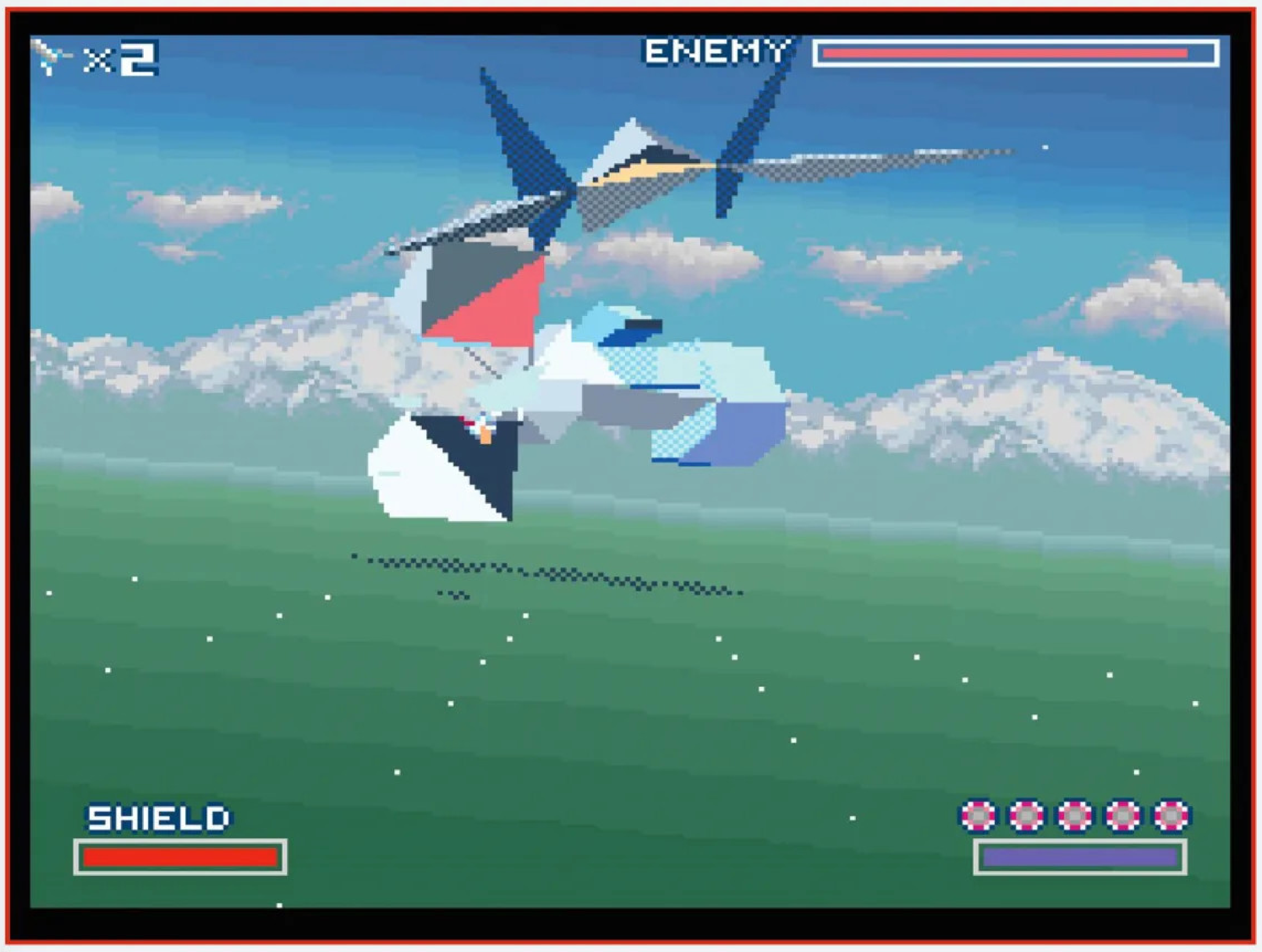
"And when I was hanging onto a missile under a helicopter, only to discover the missile got fired while I was hanging on to it. I'd been playing games for a long time before this, but to watch how they creatively switched the gameplay up, I found myself many times saying, 'No way.' I honestly couldn't tell what was sprites and what was playfields. It was very impressive for its time." And of course, we shouldn't discuss impressive games without mentioning the biggest arcade game in the world at that time, *Street Fighter II*. The SNES had a very authentic conversion, and for over a year no other console did.

So from a gamer's perspective, Nintendo's console was on a new level – and for coders used to working on the 8-bit NES hardware, it was a huge and very welcome step up that didn't require the wheel to be reinvented. "The SNES and NES are very similar as far as overall design; they both feature a CPU that's 6502-based and have separate PPU (picture processing unit) and SPU (sound processing unit) portions of the hardware," says Randy Linden, who programmed the SNES conversion of *Doom*. "Even simple things on the NES, like scrolling graphics, required specialised cartridges, but the SNES had built-in scrolling. The SNES could do some very powerful graphics effects that weren't possible on the NES, for example, the number of graphics 'layers' was much higher on the SNES than on the NES."

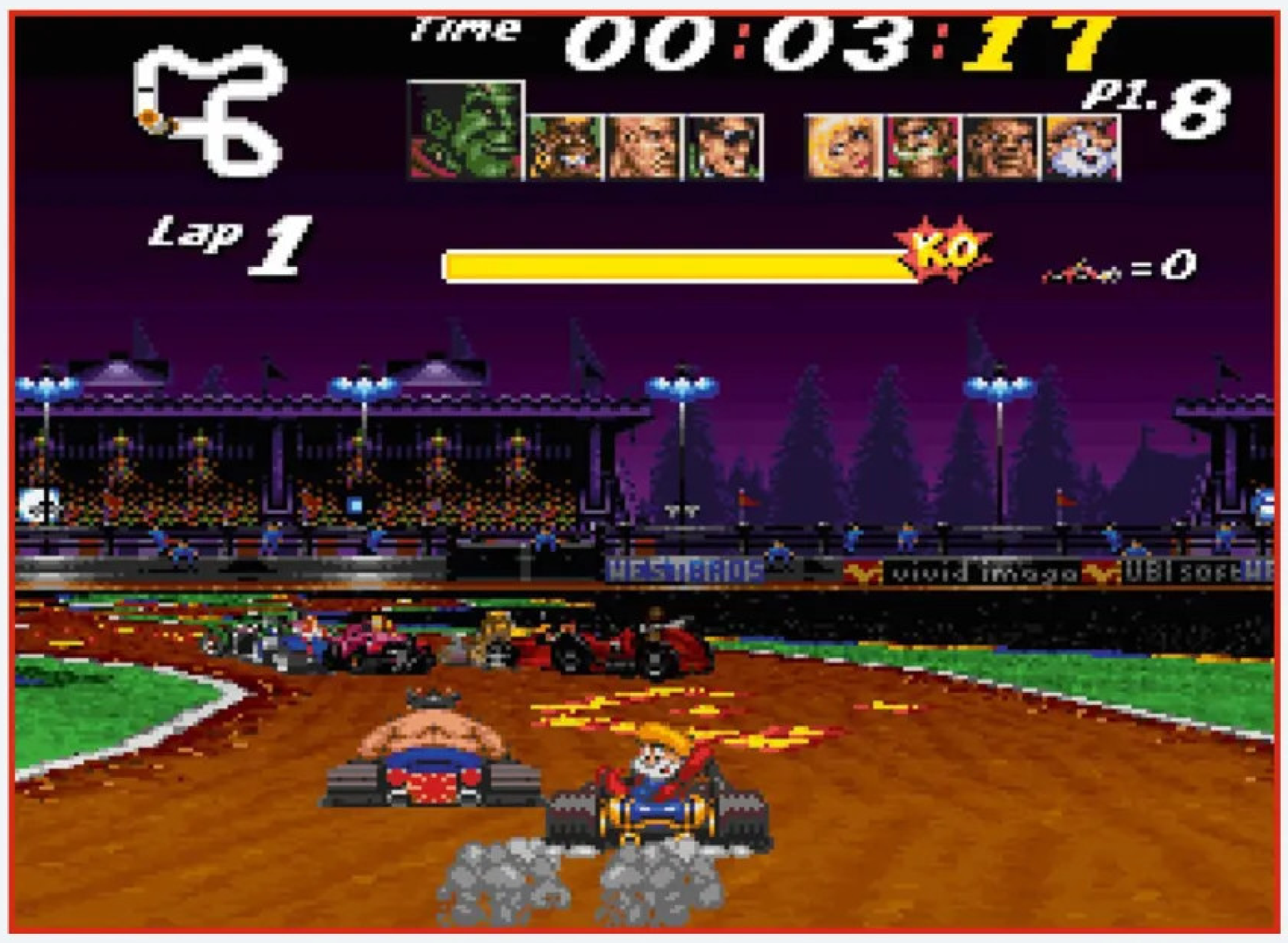
It wasn't just NES coders that loved the SNES, as programmers moving from other 6502-based systems also loved it. "Up until the SNES came out I had exclusively done games on the Commodore 64, and I first got a chance to try the SNES out after finishing *Super Space Invaders* for the C64," says Chris West, now of West Racing. "I was given the job of writing *Marko's Magic Football* for the SNES at Domark and it was like a whole new world compared to the C64. The CPU being 16-bit made coding much easier after being stuck with 8-bit, and the processor being 350% faster was also great, but it was the fact you had so many sprites and so much more VRAM – it just felt like a new world of potential for doing games. For example, in *Marko's Magic Football* I did a full physics simulation on the ball for bouncing, and friction from spinning. I couldn't do that on the C64."

But did developers feel that the console represented a step up from the 16-bit machines that it was supposed to be competing with? "From Amiga/ST, sure. Lots of nice hardware to use compared to them, which is nice," says Mike Dailly, who was then working at *Lemmings* developer DMA Design. However, Mike had also been working on the PC Engine, and the advance there was not so great. "Although the graphics hardware was nicer in general, there were some limitations that were a little frustrating by comparison. Graphics could only be uploaded to VRAM in the VBlank, whereas on the PC Engine you could do it at anytime, and the CPU on the PC Engine was much faster – though I did love the 16-bit nature of the 65816." Mike's main experience with the console came with *Lemmings 2: The Tribes*, and the CPU was a real help to him. "I had to use lots of tricks to get *Lemmings* working, especially as I had to software draw most things. The 16-bit nature was lovely, though, and made working with the large ROMs much easier than a plain 6502. The PC Engine depended on 8K banking, and it was 'okay' but still tricky. The 24-bit addressing of the 65816 made life a lot simpler."

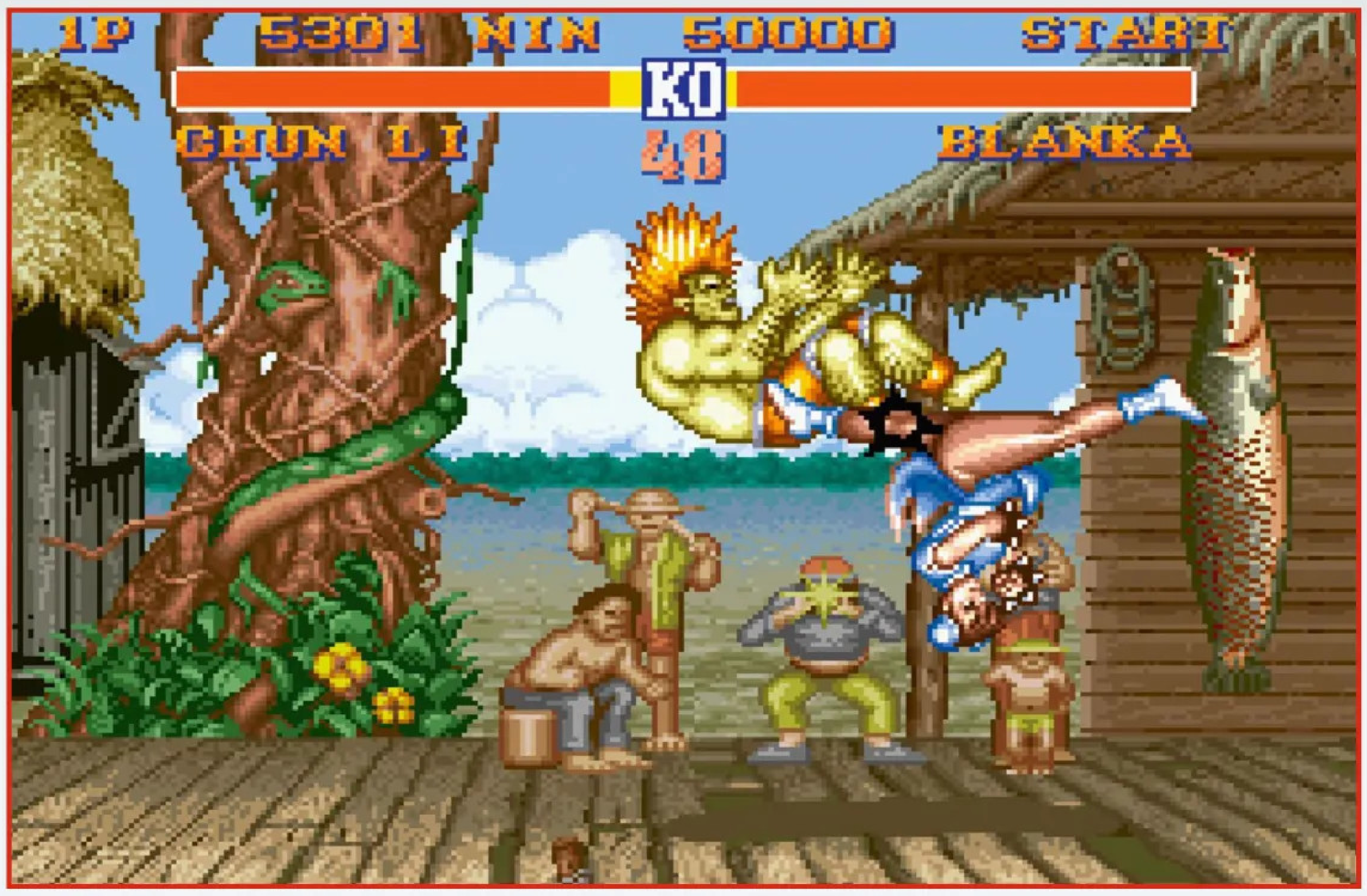
One thing that all of our developers agree upon is that the console's custom graphics hardware was amazing for its time. "The graphics and screen modes were very nice, probably the best video hardware of its time – which is why the slower CPU hurt sometimes," says Mike. "Sprites were pretty similar to the Mega Drive and PC Engine, but the tilemap screens were lovely, and Mode 7 kept things interesting!" For Chris, it was the system's colour capabilities that really stood out. "This along with the increase in resolution is just what made the SNES so exciting to us at the time. Going from being stuck with 16 basic colours, none of which ever quite suited what you needed, to a palette of 32,000 colours just felt so good." Tony West, who worked with



» [SNES] *Star Fox*'s Super FX 3D may look primitive now, but it was fast and smooth compared to the contemporary competition.



» [SNES] *Street Racer* managed a good Mode 7 implementation, despite the handicap of not being able to use enhancement chips.



» [SNES] Having *Street Fighter II* was a big deal for Nintendo, especially since the conversion was great.

▶ Chris on graphics for SNES games such as *Marko's Magic Football* and *Street Racer*, chimes in to agree. "I was going to say how much nicer the SNES palette was compared to the Mega Drive, you could get much more subtle colours which is why I think all SNES games always looked so much better than the Mega Drive versions. For example, in *Street Racer* the cars and characters we made were converted over for the Sega version but they lost the subtle shading. The Mega Drive just had a load more contrast in its colours that jarred my eyes compared to the SNES."

One thing that Nick appreciated was the flexibility of the graphical hardware, which offered eight different modes of operation. "The display on consoles of this period were made up of screen playfields. Machines like the C64 and Spectrum only had one single playfield. The Sega Genesis allowed two playfields, and most people used the second playfield for parallax effects – drawing two playfields but moving one at a different rate to the other. But the SNES allowed you to chose from several video modes, the most powerful of which had the ability to display four playfields simultaneously. And another really cool trick was that it allowed you to combine the four playfields in a multitude of ways. It wasn't just a bunch of playfields drawn on top of each other. You could select *how* they were to be combined. For example, you could have one playfield be 'blended' with another playfield by being 'added' to it or 'subtracted'."

> "THE SNES ALLOWED YOU TO CHOSE FROM SEVERAL VIDEO MODES, THE MOST POWERFUL OF WHICH HAD THE ABILITY TO DISPLAY FOUR PLAYFIELDS SIMULTANEOUSLY"
>
> NICK JONES

Use of graphics modes depended on the needs of the game. "I usually went with a graphics mode that supported three playfields. The first playfield was usually used for the main playing area, the second playfield was used as a parallax effect but I utilised the third playfield in entirely different ways depending on the effect I wanted on that particular level," Nick explains. "For example, in the very first level of *Earthworm Jim*, I had my artist Steve Crow draw the third playfield as a bright sun with sun beams. And the second playfield was a layer of clouds that moved at half speed. I made the sun playfield be added to all of the other layers which gave everything a bright look. And as you moved across the level, if the sun appeared to go behind the clouds, I smoothly changed the palette of colours that made up the sun image to be black, so they stopped being 'added', and then smoothly changed the palette of colours back to their normal values when the sun came out. It looked stunning. These were all subtle little effects; they didn't change the gameplay but just made your game seem so much more polished."

The SNES sound hardware was also a major step up, and this was a custom design by Sony consisting of an independent CPU which drove a DSP unit. This was a true digital sound processor, capable of playing back any samples you liked, with up to eight simultaneous sounds played at once. However, there were some limitations – the samples had to fit in 64KB of RAM, which wasn't much space. Thankfully pitch modulation allowed each sample to serve as many notes, but even then they were quite often compressed to save space. Still, the results could be quite amazing – no other console of the time could have handled the magnificent orchestral sound of *ActRaiser*'s Fillmore stage theme, nor *R-Type III*'s grungy rock reinterpretation of the original game's opening stage theme.

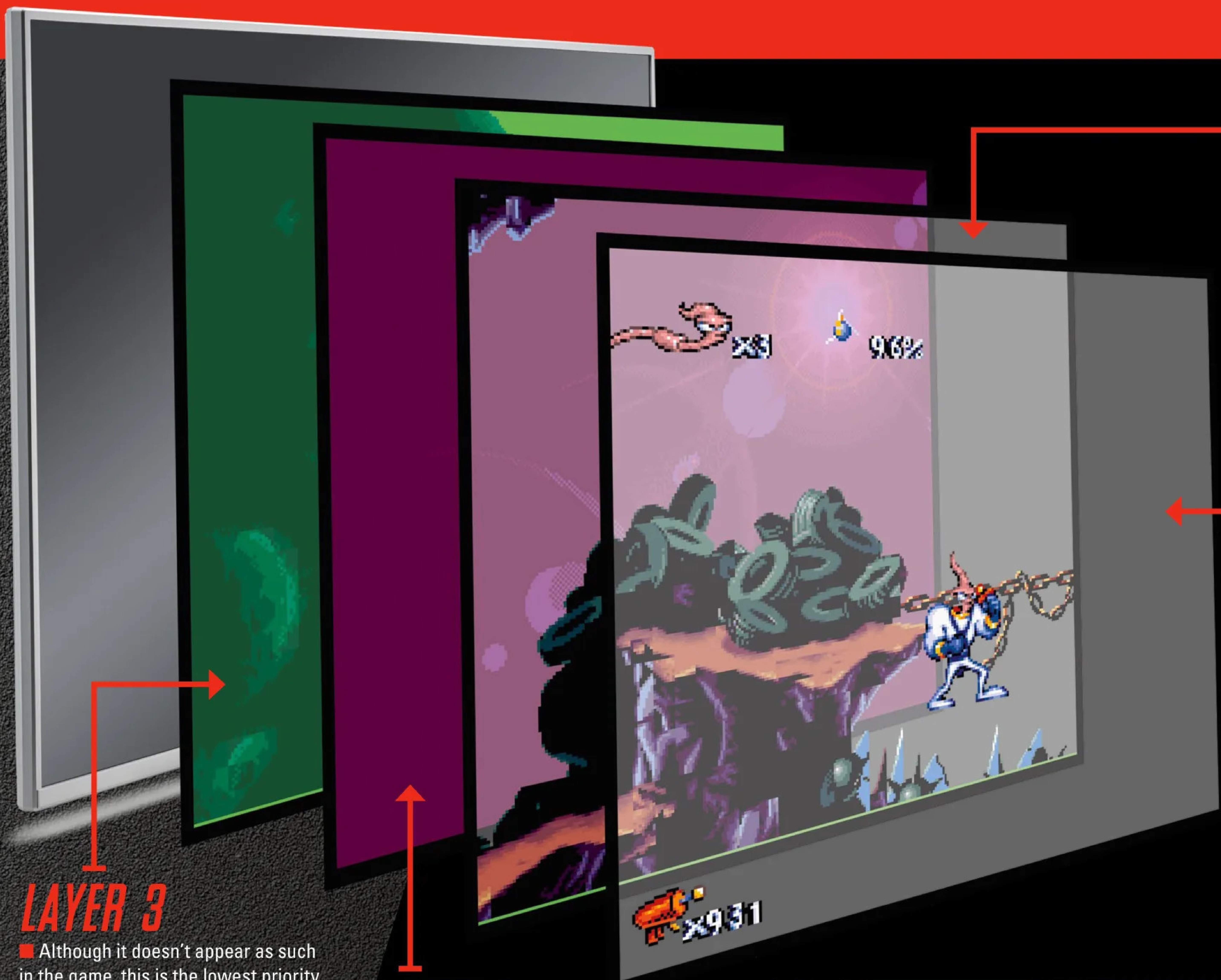
But the SNES was not an unqualified triumph, with its CPU providing programmers with some serious headaches. "The most notable weak point was not just the clock speed of the processor but the power of the processor, too. It's hard to make your game run at 60 frames per second when the processor is slow. It's like running the 100 metres in sub-20 seconds, but with only one leg," says Nick. "Another place I found this extremely limiting was when the player would start a new level. The levels were stored compressed and would be uncompressed as needed. And ▶

Secret of Mana
The Legend of Zelda
A Link to the Past
Super Nintendo
Super Star Wars

» The high-quality output of games on the SNES means that it's now a much-coveted system to collect for.

FRAME-UP

THE MOST COMMONLY USED GRAPHICAL MODE OF THE SNES IS MODE 1, WHICH OFFERS A GREAT BALANCE OF BACKGROUND LAYERS AND COLOUR DEPTH. HERE IS HOW EARTHWORM JIM USES THEM



LAYER 1

Another 16-colour layer, this one hosts the foreground and constantly refreshes as Jim moves through the stage. Although this stage doesn't use this effect, it's possible to set priority for individual tiles so that they draw above Jim – useful if you want to show him walking behind a piece of scenery, for example.

OBJECT LAYER

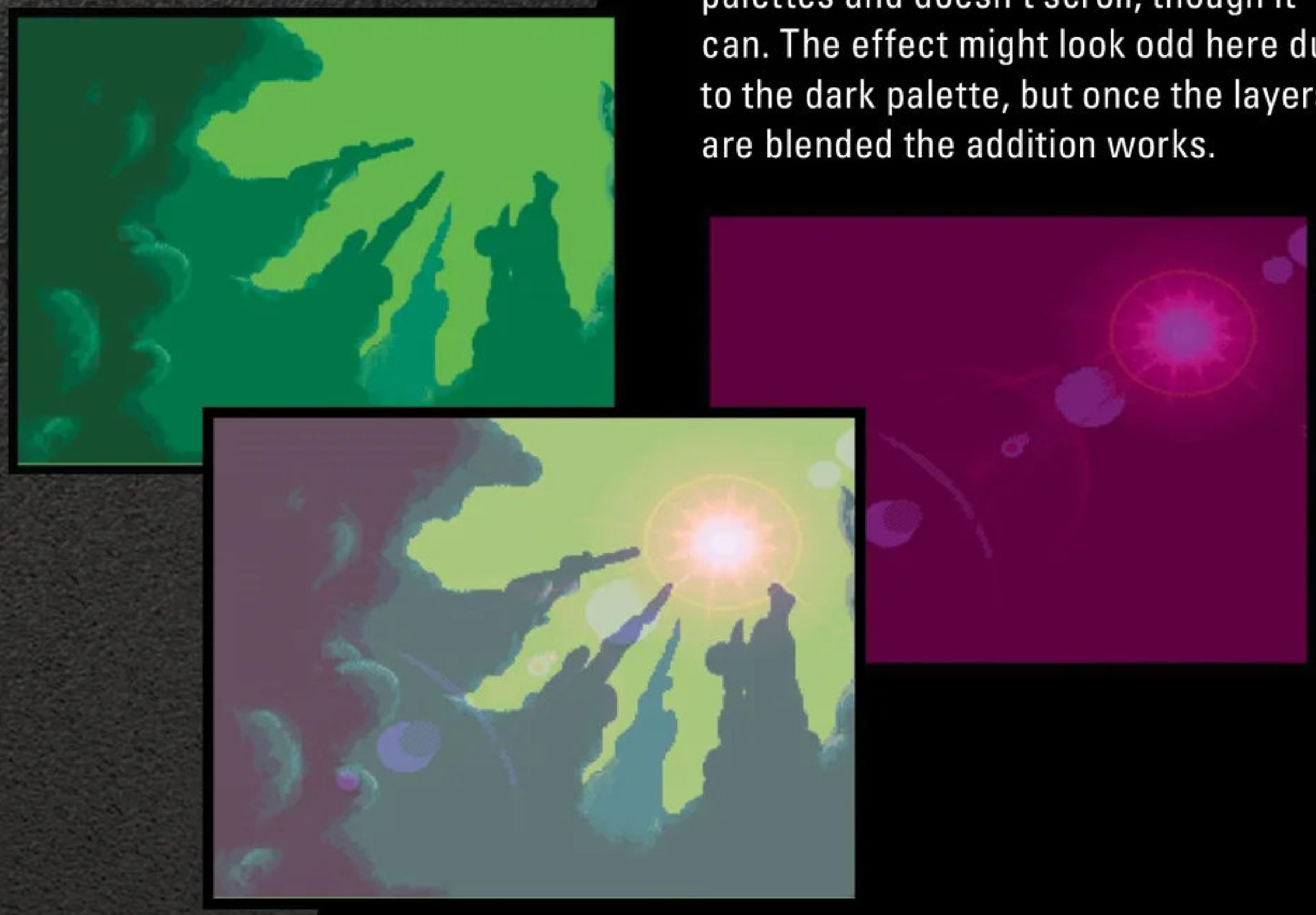
This is where the sprites live, like enemies, items and Earthworm Jim himself. If it moves around freely or requires lots of animation, this is probably where it's being drawn. In *Earthworm Jim* the HUD is also displayed on this layer, freeing the developers to use the three background layers to their full potential.

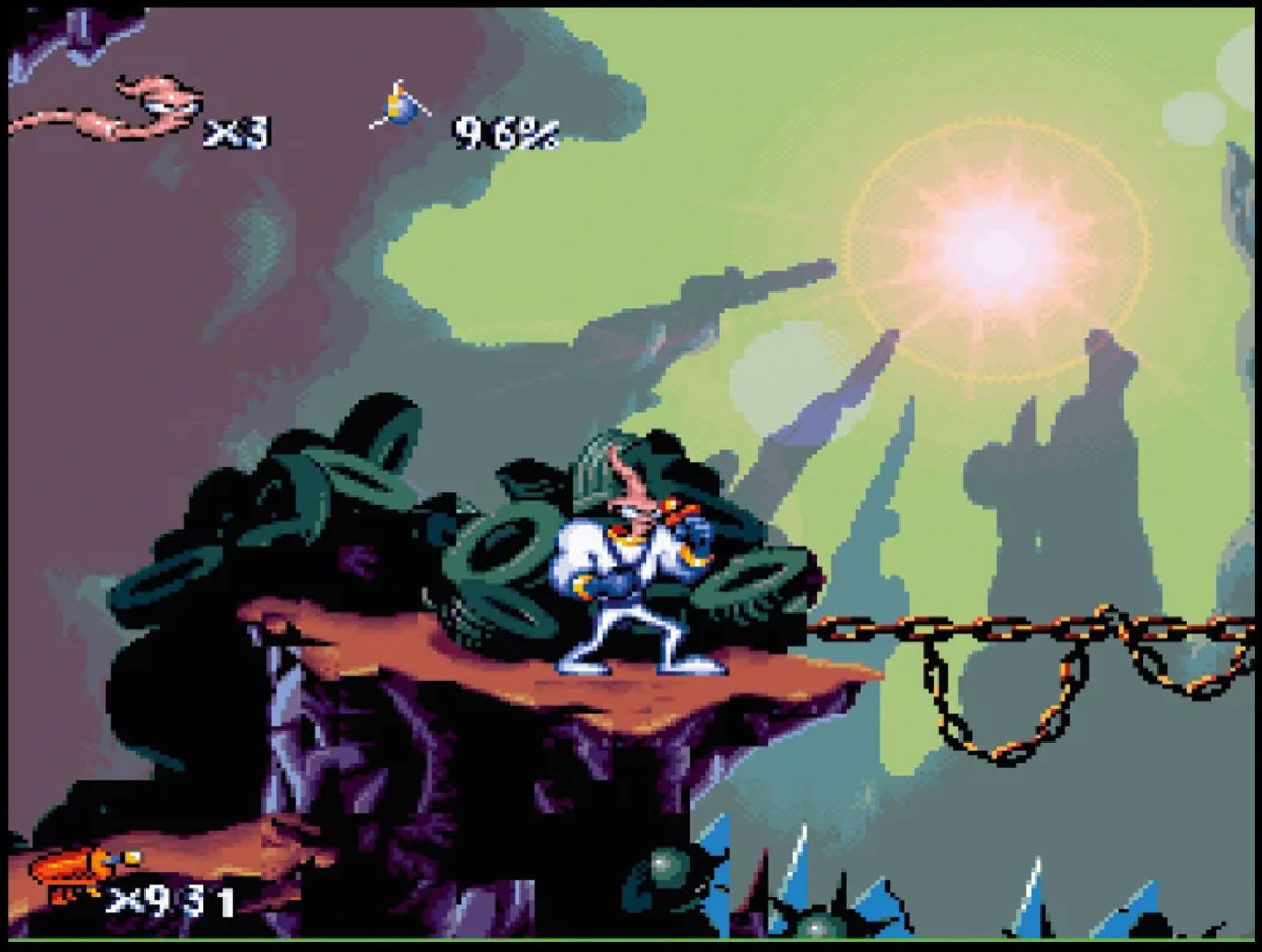
LAYER 3

Although it doesn't appear as such in the game, this is the lowest priority layer – the one which everything else draws on top of. It uses four-colour palettes, hence the limited detail on the mountains. Because this is the least-capable layer, many games use a priority mode that sets it to instead draw at the front, as a HUD.

LAYER 2

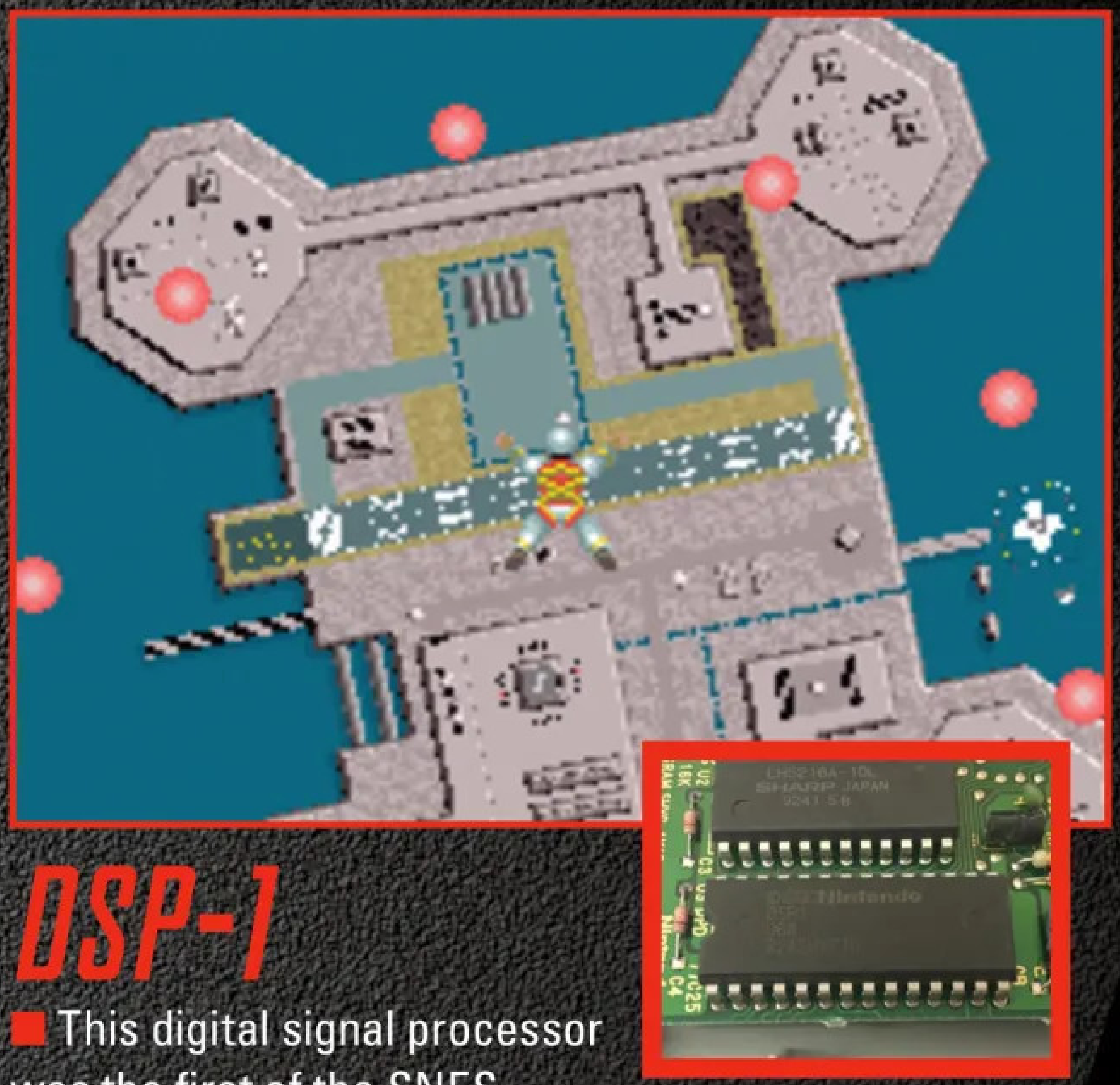
This layer appears to be the furthest background layer, but in truth it is drawn in front of Layer 3 and adds to its colour using the system's colour-blending features. The layer uses 16-colour palettes and doesn't scroll, though it can. The effect might look odd here due to the dark palette, but once the layers are blended the addition works.





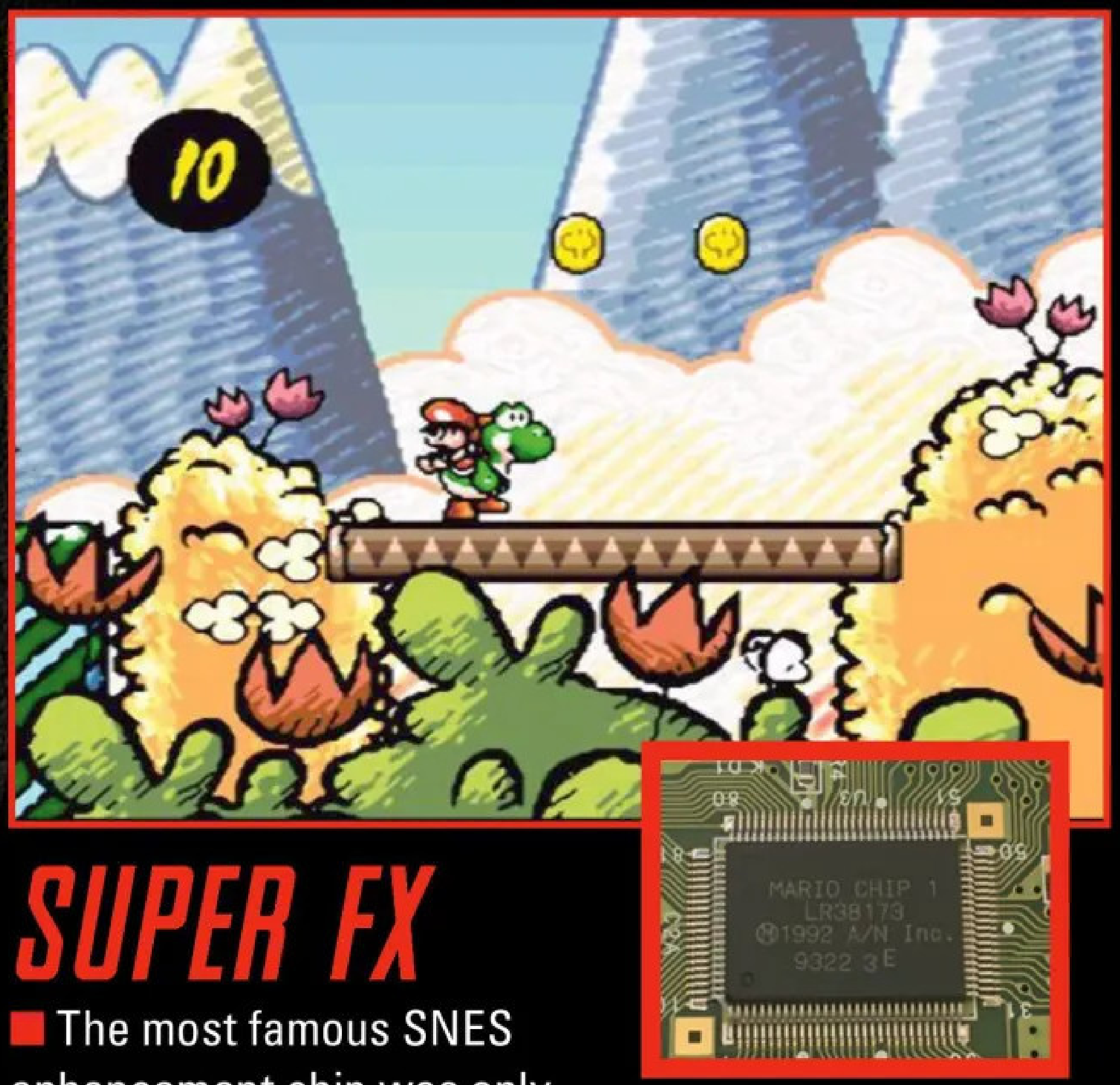
WOULD YOU LIKE CHIPS WITH THAT?

THE ENHANCEMENTS THAT PUSHED GAMES BEYOND THE LIMITS OF THE SNES



DSP-1

■ This digital signal processor was the first of the SNES enhancement chips, introduced with *Pilotwings* in 1990. It was used in 15 games – all of them Mode 7 games like *Super Mario Kart*, where it helps with the required 3D mathematical calculations.



SUPER FX

■ The most famous SNES enhancement chip was only used in eight games. Most of them used it primarily for drawing polygonal graphics, but *Yoshi's Island* also used the updated Super FX 2 for sprite operations including rotation and scaling.

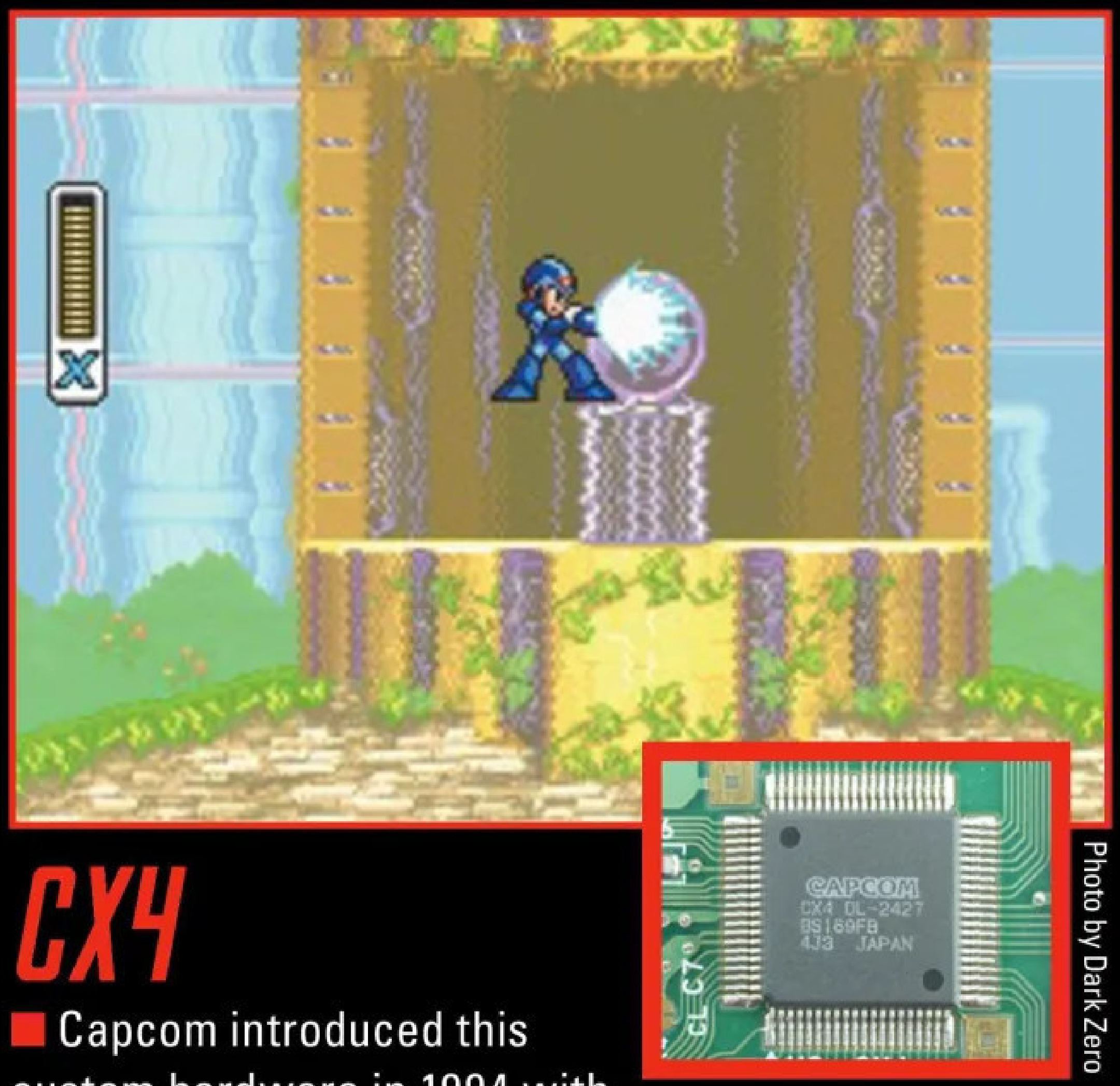


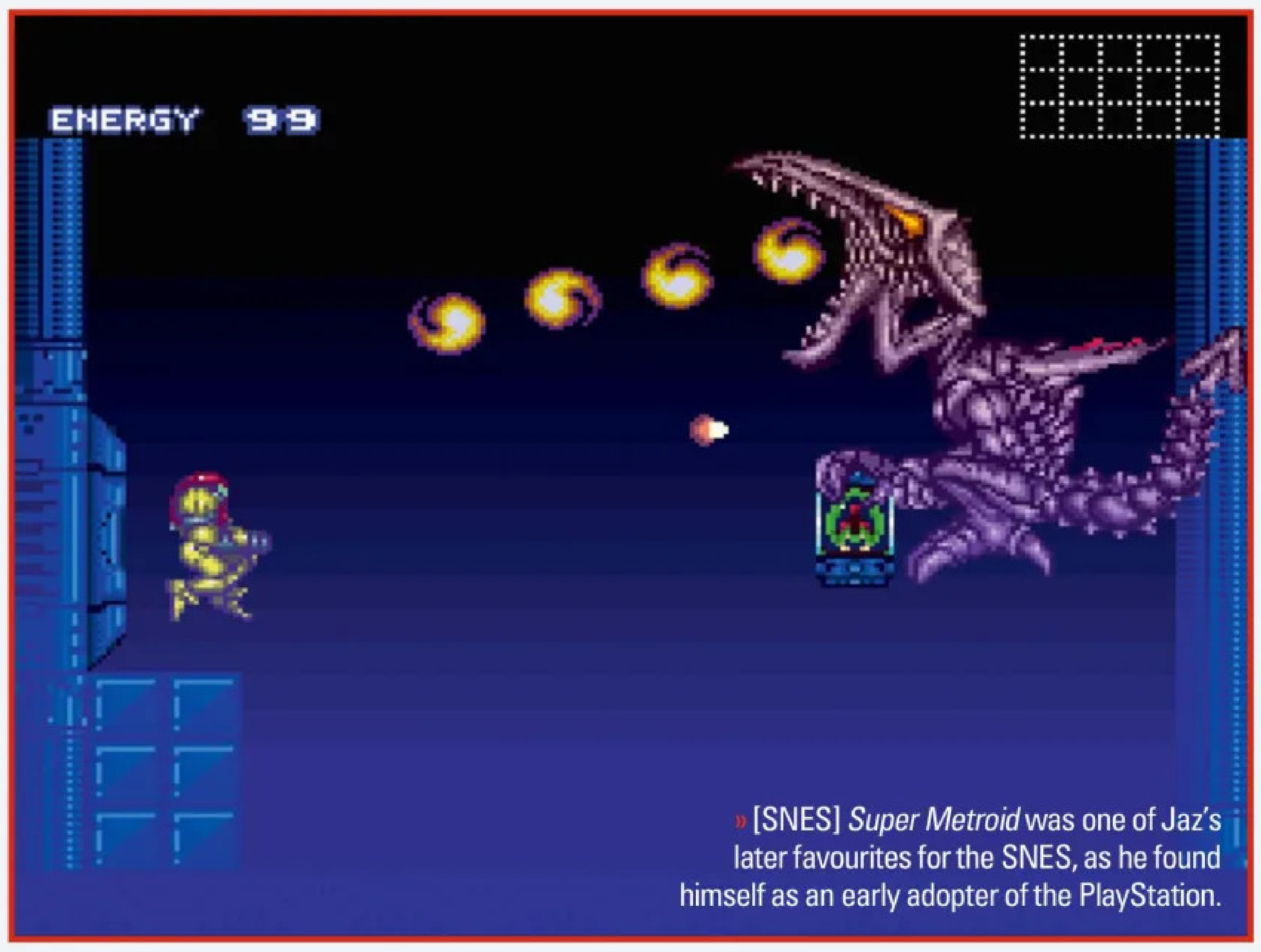
Photo by Dark Zero

CX4

■ Capcom introduced this custom hardware in 1994 with *Mega Man X2*. The chip is best known for its role in helping the game to display wireframe graphics. After its second appearance in *Mega Man X3*, it was never used again.

MARIO
× 2
46
TIME
161
× 56
130920

» [SNES] *Super Mario World* comfortably outclassed its NES predecessors while leaving plenty of room for the console to show growth.



» [SNES] *Super Metroid* was one of Jaz's later favourites for the SNES, as he found himself as an early adopter of the PlayStation.

▶ decompression takes time. If you look at when you start a new level of *Earthworm Jim* on the SNES and the Genesis, you'll see that the levels start in about half the time of the SNES. That is a direct indication of the limits of the SNES processor right there."

The relative weakness of the CPU combined with a quirk of the graphics hardware to cause strain. "Another weak point was how hardware sprites were drawn," Nick says. "They were limited to two sizes of your choice. Most people went with the sizes 8x8 pixels and 16x16 pixels. So if you wanted to draw a moving image, such as your main character, you had to set up *lots* of smaller sprites to make up the bigger image. It doesn't sound terribly limiting but on a machine that was underpowered, and you're trying to draw lots of moving things on the screen, it did consume a lot of the processor power, too. On the Genesis, you weren't limited like this at all. You could have any variety of sizes from 8x8 pixels up to 32x32 pixels with all combinations in between. So the SNES had more work to do with a processor that was nowhere near as powerful." This meant that the system struggled with fast action games and those that threw around plenty of sprites, leading to slowdown in games like *Super R-Type* and *Gradius III*.

Of course, running up against the limitations of its own hardware design was something that Nintendo was well-prepared for. In the previous generation, Nintendo had commonly supplemented the hardware performance of the NES by placing additional hardware on the cartridge, in the form of chips commonly known as 'mappers'. The SNES was capable of exactly the same trick and a number of chips would be created over the life of the console, used by dozens of games, the most famous of which was Argonaut's Super FX. The processor allowed the SNES to generate 3D polygon graphics at a sufficient speed to support action games, as seen in *Star Fox* and other games, which was quite a marketing coup in 1993. But the very first game to use such a chip was *Pilotwings* – the game that had previously been shown off as *Dragonfly*, now retooled back to the original flight simulator concept – and it sported a much more appealing look than those early demos as a result.

***Pilotwings* was one of the earliest games to make heavy use of the console's most renowned graphical feature, Mode 7.** "The Mode 7 playfield, that allowed you to project the playfield in 3D, was probably the most positive thing on the SNES. I can't even tell you how many hours I poured into *Super Mario Kart* with its use of Mode 7 to draw the '3D' track. I don't think I've ever put so much time into any game, period," says Nick. Chris is intimately familiar with the feature, as he developed the fondly remembered multiplayer racer *Street Racer*. "Mode 7 was such a unique feature that really made some amazing games possible on the SNES. It was designed to allow zooming and rotating of the screen, but you could also do that per scanline – so by changing the matrix used on each line you

Nintendo
SA1
RF5A123
5AB 72

SA-1

The ‘Super Accelerator’ was introduced in 1995 and was the most used enhancement chip, appearing in games such as *Kirby’s Fun Pak* and *Super Mario RPG*. It houses a 65C816 CPU core running at 1074MHz – triple the speed of the 5A22.

152700
43
PRESS START
KEN
CHUN-LI

Nintendo
S-DD1

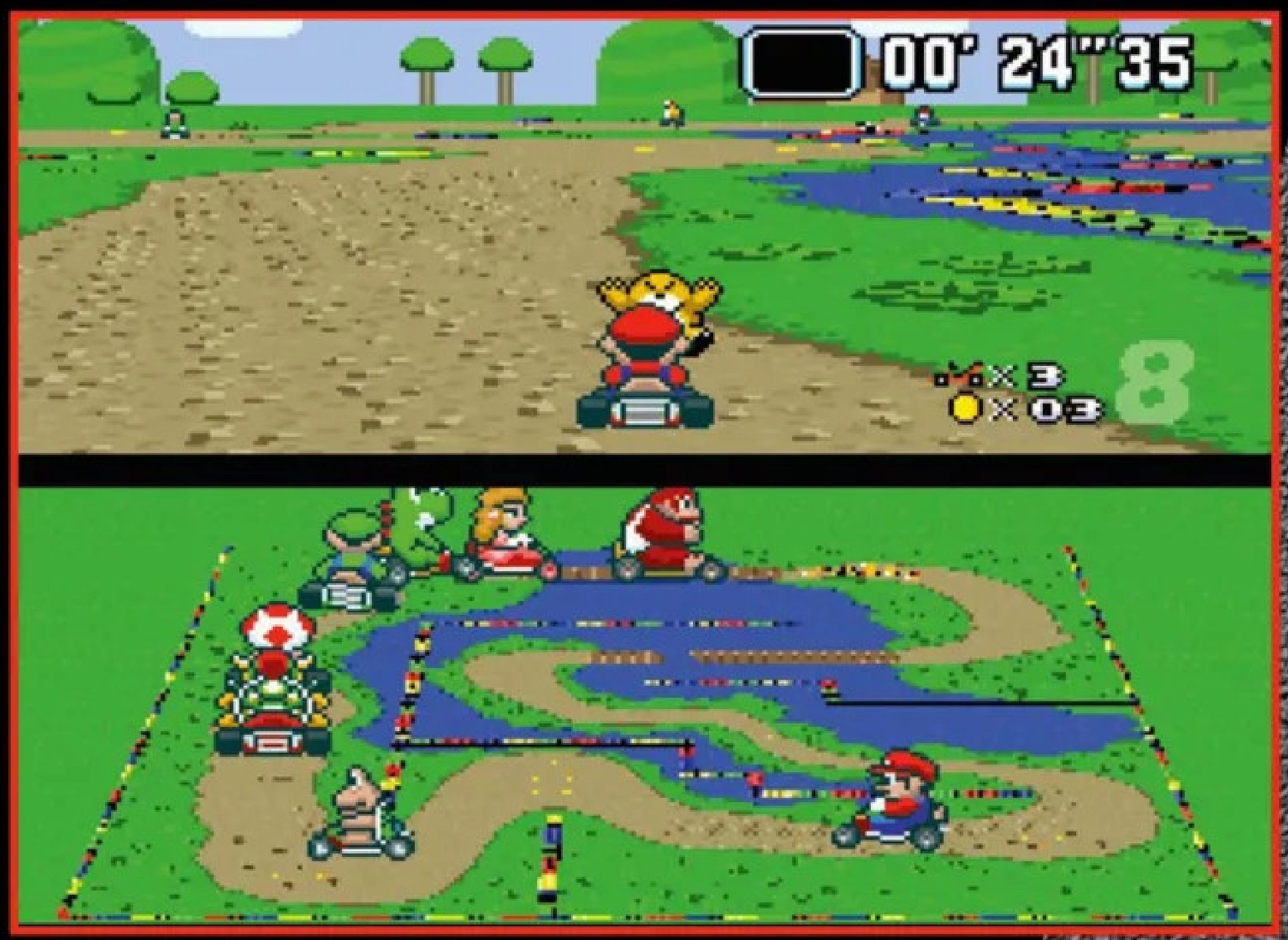
Photo by PmTar

S-DD1

This chip was introduced in 1996, and only used for two games – *Star Ocean* and *Street Fighter Alpha 2*. Both games had to heavily compress sprite data to fit onto their cartridges, and this chip was used to alleviate the burden of data decompression.

314600
70
PRESS START
RYU
GEN
3HIT

» [SNES] By the end of the system’s life, the SNES was hard-pushed even with conversions of 2D arcade games.



» [SNES] Even Nintendo faced the limitations of the SNES, though *Mario Kart* was hardly an unwelcome result of that.

could make it look like the screen went into the distance, and therefore make driving games possible. The calculations were quite intensive for each scanline, though, and used up a lot of CPU time pretty quickly,” he tells us. “Games like *Mario Kart* had custom extra processors to handle that maths so it wasn’t a problem.”

With that in mind, it’s not a surprise that a Mode 7 game was the first to cause Nintendo a problem, but the console’s most renowned special effect wasn’t just a workout for the CPU – it was tough to design around. The Mode 7 tilemap was limited to a size of 128x128 tiles, drawing from a maximum of 256 unique 8x8 pixel tiles. This could be fudged by constantly updating the tilemap, but it wasn’t a universally applicable solution, as Nintendo found when it tried to create a multiplayer version of *F-Zero*. “To have a split-screen in *F-Zero* would require rebuilding the 128x128 map for each half of the screen depending on where each player was in the world, and that just wasn’t doable in the raster time,” Chris tells us. In **RG167**, Nintendo’s developers revealed that their solution was to slow the game down to work within the 128x128 limit, ultimately resulting in a change of focus that led to the creation of *Super Mario Kart*. Chris ultimately took the same approach. “In *Street Racer*, we just used maps that were 128x128 like *Mario Kart*, so split-screen was just a case of calculating the view matrices for each line which you are doing anyway.” Playfield size wasn’t the only limitation, either. To achieve the kind of scrolling background graphics on the horizon as seen in games like *Street Racer* and *Super Mario Kart*, it was necessary to switch modes mid-frame during horizontal blanking, as Mode 7 only allowed for a single background layer to be drawn.

But while it was possible to add extra chips to make up for the console’s weaknesses, it wasn’t always practical. “For *Street Racer* we could not use any extra CPUs as it added too much cost, so we had to come up with a way of doing the same thing but doing it a lot quicker,” says Chris. “Nick Jones started the work on that but then went to work for Shiny in the States, but I took what he did and adapted it and changed it to give a better perspective and sped it up a bit so we could get the same look as *Mario Kart* but for a fraction of the CPU usage. That then freed up enough CPU time to have bigger cars on screen.

“Not long after *Street Racer* came out Mev [Dinc, Vivid Image founder] was asked to visit Nintendo to show them *Street Racer*, and when he got back he said they could not believe that we did what we did with no extra processors on the cart. So that is something I am proud ▶

> “FOR STREET RACER WE COULD NOT USE ANY EXTRA CPUS AS IT ADDED TOO MUCH COST, SO WE HAD TO COME UP WITH A WAY OF DOING THE SAME THING BUT DOING IT A LOT QUICKER”
>
> **CHRIS WEST**

CAPCOM
STREET FIGHTER II TURBO
Nintendo
SUPER NINTENDO
SUPER NINTENDO ENTERTAINMENT SYSTEM
SELECT
START
X
A
Y
B

» Quality arcade ports like *Street Fighter II* supplemented Nintendo’s wave of first-party games.

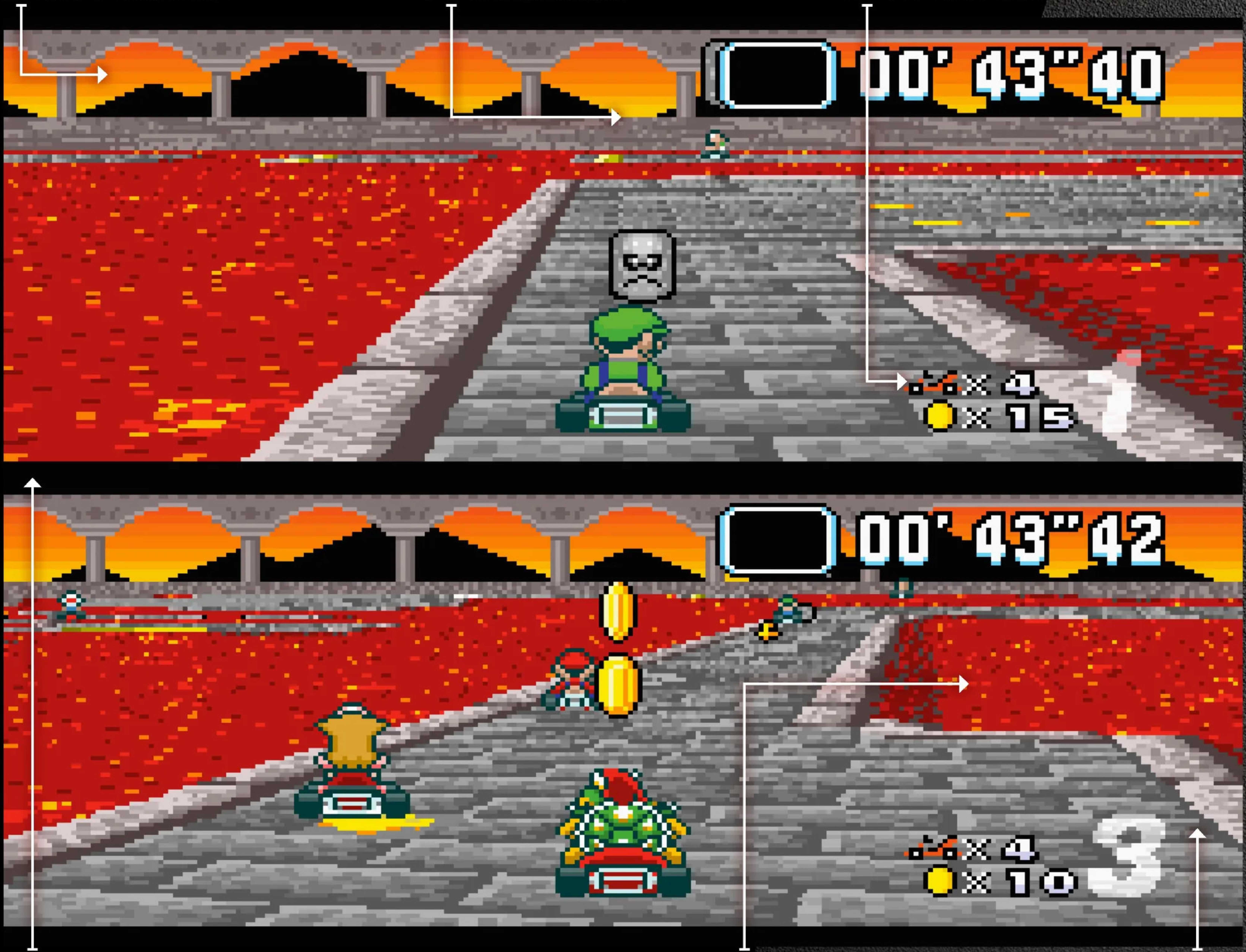
SEVENTH HEAVEN

HOW CLEVER PROGRAMMING MADE MODE 7 MORE THAN JUST A NEAT GRAPHICAL TRICK

1 This top part of the background doesn't use Mode 7 at all, instead using one of the more capable background layers.

2 At this line, the SNES switches modes to begin drawing the Mode 7 background layer in all of its rotating, scaling glory.

3 Since Mode 7 only allows for a single background layer, HUD elements like counters are drawn to the screen as sprites.



4 This thick black line is drawn to give the SNES enough time to revert modes and set up the second player's screen.

5 The transformation matrix for the Mode 7 playfield has to be altered every line in order to simulate perspective effectively.

6 The level is limited to a single playfield's size, as it's impossible to refresh the Mode 7 tile map for player two's screen.

"THE MODE 7 PLAYFIELD, THAT ALLOWED YOU TO PROJECT THE PLAYFIELD IN 3D, WAS PROBABLY THE MOST POSITIVE THING ON THE SNES. I CAN'T EVEN TELL YOU HOW MANY HOURS I POURED INTO SUPER MARIO KART WITH ITS USE OF MODE 7 TO DRAW THE '3D' TRACK. I DON'T THINK I'VE EVER PUT SO MUCH TIME INTO ANY GAME, PERIOD"

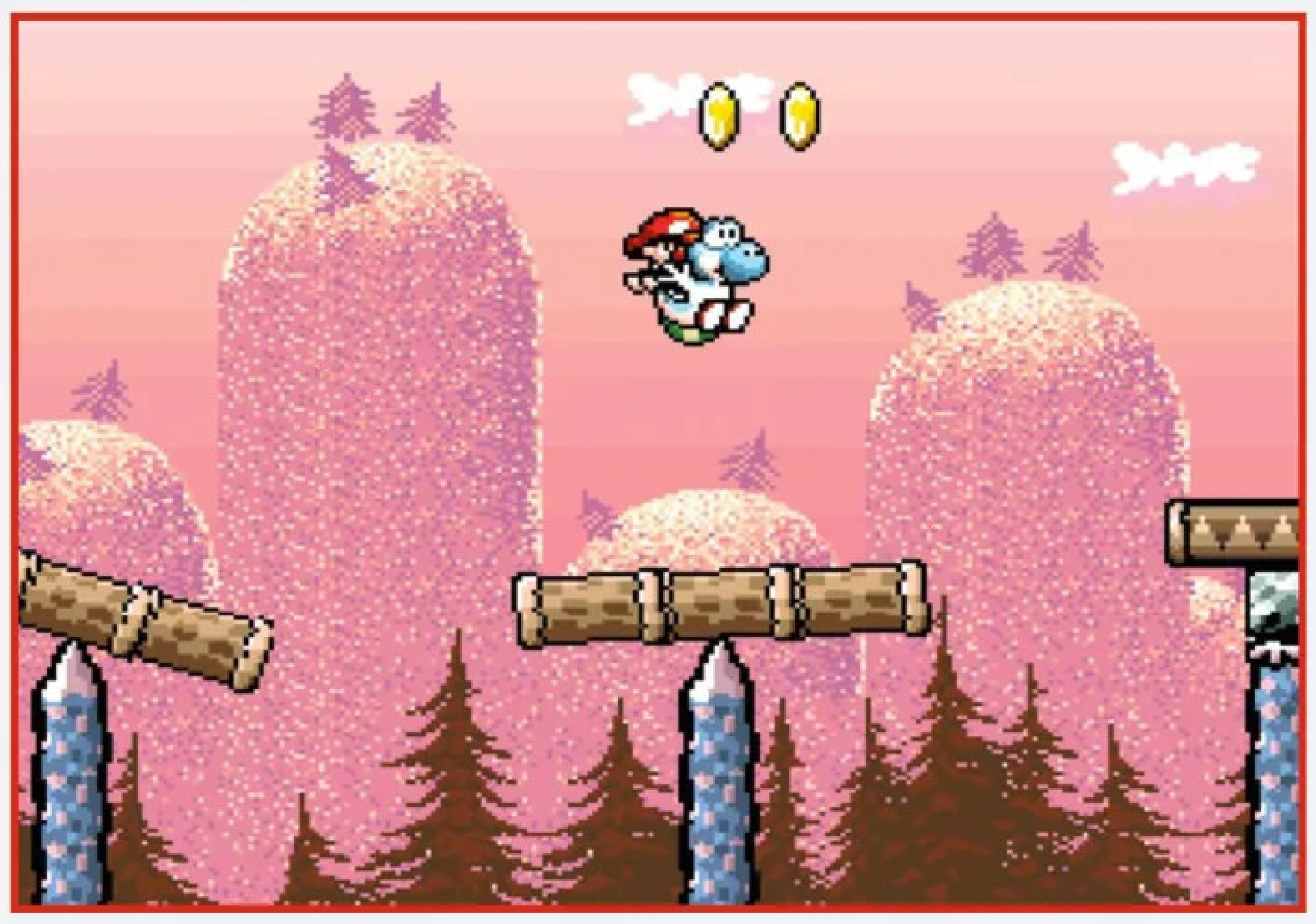
NICK JONES

to have done, something that the people who built the hardware didn't think was possible." That wasn't the only technical achievement that *Street Racer* showcased, either. "I was also very happy that we had the first four-player game of its type on any console, again something Nintendo just didn't think could be done," Chris continues. "That just came out of a bored evening of coding. I had just got the two-player mode working in the game and I just wondered if it was possible to push it any further, so I changed a few bits and got three players working, and then four. That was satisfying."

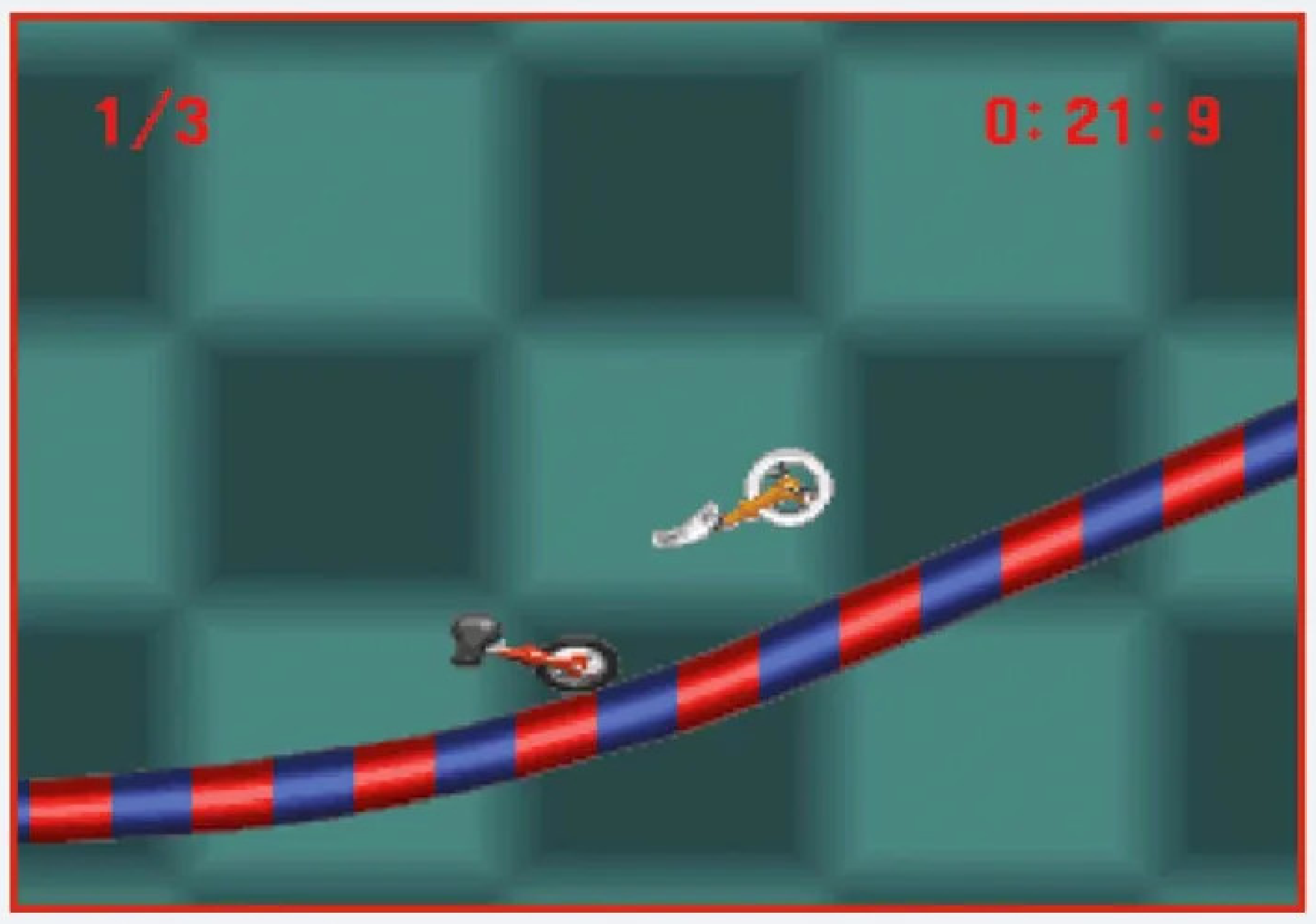
Despite being a technical marvel, the SNES didn't sustain the near-monopolistic dominance that Nintendo had enjoyed during the 8-bit era, but there was no way it could have done. Where the NES had been able to sweep into an open market that many had abandoned as a fad, this time it faced credible competitors that were able to take advantage of Nintendo's reluctance to retire its golden goose. It also faced increased regulatory challenges when it came to its relationship with third-party publishers, ensuring that it couldn't tie up the software supply for itself. But by waiting to see what the opposition had in store, Nintendo was able to deliver a technically superior console that allowed it to retain its position as the global market leader, despite a fierce challenge from NEC at home and Sega internationally.

This success undoubtedly influenced Nintendo's strategy for the future, so it ensured that the N64 was also the last of its generation to arrive on the market, in the interests of being the most powerful console. This left Nintendo reliant on the SNES to hold the fort against a variety of next-gen competitors, and it did an admirable job of this. Going into the 1994 holiday season, the Jaguar and 3DO were starting to see substantial software development and Sega was launching the 32X add-on for the Mega Drive. Nintendo was able to repel that triple threat with ease with *Donkey Kong Country*, developed in the UK by Rare. Using Silicon Graphics hardware, the company was able to prerender 3D visuals that looked convincing on the SNES giving the game an incredible look. "I remember seeing it for the first time and being very impressed by it," says Jaz, who by this point was working for Virgin Games. "A lot of clever neat graphical tricks to make them look 3D and really give the graphics depth and detail, and they were fun to play – albeit difficult. It helped maintain excitement for the system, even when there were things like the PlayStation emerging." Millions of copies were sold, and doubtless plenty of SNES consoles with them.

Rare would continue to use its 'Advanced Computer Modelling' technology in *Donkey Kong Country*'s two sequels in 1995 and 1996, as well as the arcade game *Killer Instinct* which saw a SNES port in 1995. However, other games in this late period saw the console become increasingly reliant on the use of the Super FX and other enhancement chips to keep up with the competition – in 1995 alone, more games used them than had done in the first four years of the console's life. One such game was *Doom*. "I was working independently on my own 3D engine called 'RAGE' (or 'Reality Engine') that was designed for the Super FX chip and realised I could write conversion tools which processed *Doom* data into the format required by my engine," says Randy Linden. "After a few months of development, I had enough of the game operational as a proof-of-concept demo. I showed the prototype to Sculptured Software who then brought the demo to id Software, who were very impressed with what I had accomplished and gave us the go-ahead to complete the game."



» [SNES] The SNES couldn't rotate sprites without help – *Yoshi's Island* here uses the Super FX 2 to do so.



» [SNES] The slow CPU didn't mean universally slow games – *Unirally* moved at a pace that could easily overwhelm newcomers.

"AT THE TIME DOOM WAS RELEASED, IT WAS THE SECOND-MOST EXPENSIVE CARTRIDGE AVAILABLE! THE ONLY THING WHICH WOULD HAVE INCREASED THE COST OF THE INDIVIDUAL HARDWARE UNITS WOULD HAVE BEEN TO ADD A BATTERY FOR SAVE GAMES"

RANDY LINDEN

All of the new consoles could run *Doom*, so for the venerable SNES to do so was quite a coup. However, the truth is that a stock SNES would not have come close to running the game, given how heavily the engine relied on that enhancement chip. "The RAGE game engine runs approximately 95% on the Super FX 2 chip and 5% on the regular SNES 65816 hardware. The Super NES 65816 handles DMAs, graphics transfers, interrupts, reading the joysticks etc, but the actual game runs on the Super FX – this includes things like visibility determination, collision detection, object movement and enemy AI, plus all the drawing of the graphics is done on the Super FX side as well," says Randy. Of course, that had a cost associated with it – when the game hit the UK market, it was a remarkable £64.99. "At the time *Doom* was released, it was the second-most expensive cartridge available! The only thing which would have increased the cost of the individual hardware units would have been to add a battery for save games," Randy continues. "The publisher, Williams, went to great lengths to make *Doom* for the SNES a very special game and that's why the cartridge itself was red instead of the usual grey colour."

The SNES was coming to the end of its life, and by 1996 there was no disguising it. It had no hope of competing with the 3D consoles, even with the Super FX, and it was beginning to lose pace with 2D games. By the middle of the year the N64 swept in to give the SNES a well-deserved rest, and would define gaming in its own unique way. But that's a story for another time – what matters is the legacy of the SNES, a console that proved the success of the NES was no fluke, and that Nintendo would not relinquish its crown easily. Much more than with most other consoles, the decline of the SNES marked the true end of an era.

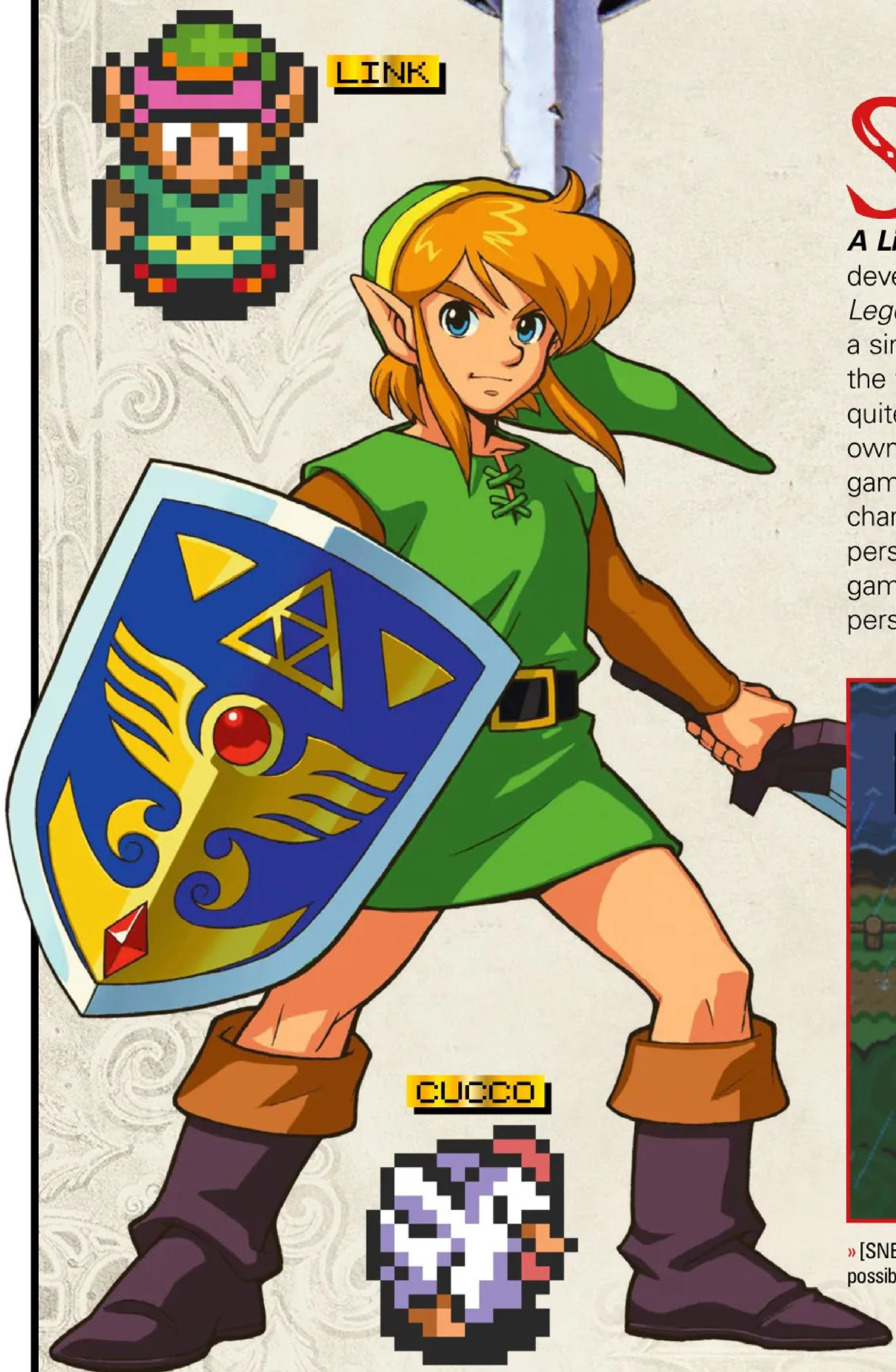
"To me, things like the PlayStation represent the first consoles of the modern era – 3D graphics, CD technology – it was a considerable step ahead of the SNES and the Mega Drive. To me they represent the end of that cartridge-driven era," says Jaz. "I look at the SNES as being a real defining moment in gaming, in terms of its 16-bit legacy. It didn't bring a lot of new ideas to the table, but it did refine and establish games designs. Platform games, shoot-'em-ups, in particular RPGs – those more traditional games, it took those and brought those to a pinnacle that hasn't ever been beaten, because there just isn't anything out there that can compete with that very definition of 16-bit gaming. I think that's why it's so well-loved – it represents an era that people copy, but it's something that won't ever be recaptured." We can't agree more, and if there's one thing we'd bet on in the retro gaming world, it's that over 30 years from now, the likes of *Super Mario World* and *F-Zero* will still be seeing regular play. ✱

ULTIMATE GUIDE

THE LEGEND OF ZELDA® A LINK TO THE PAST™

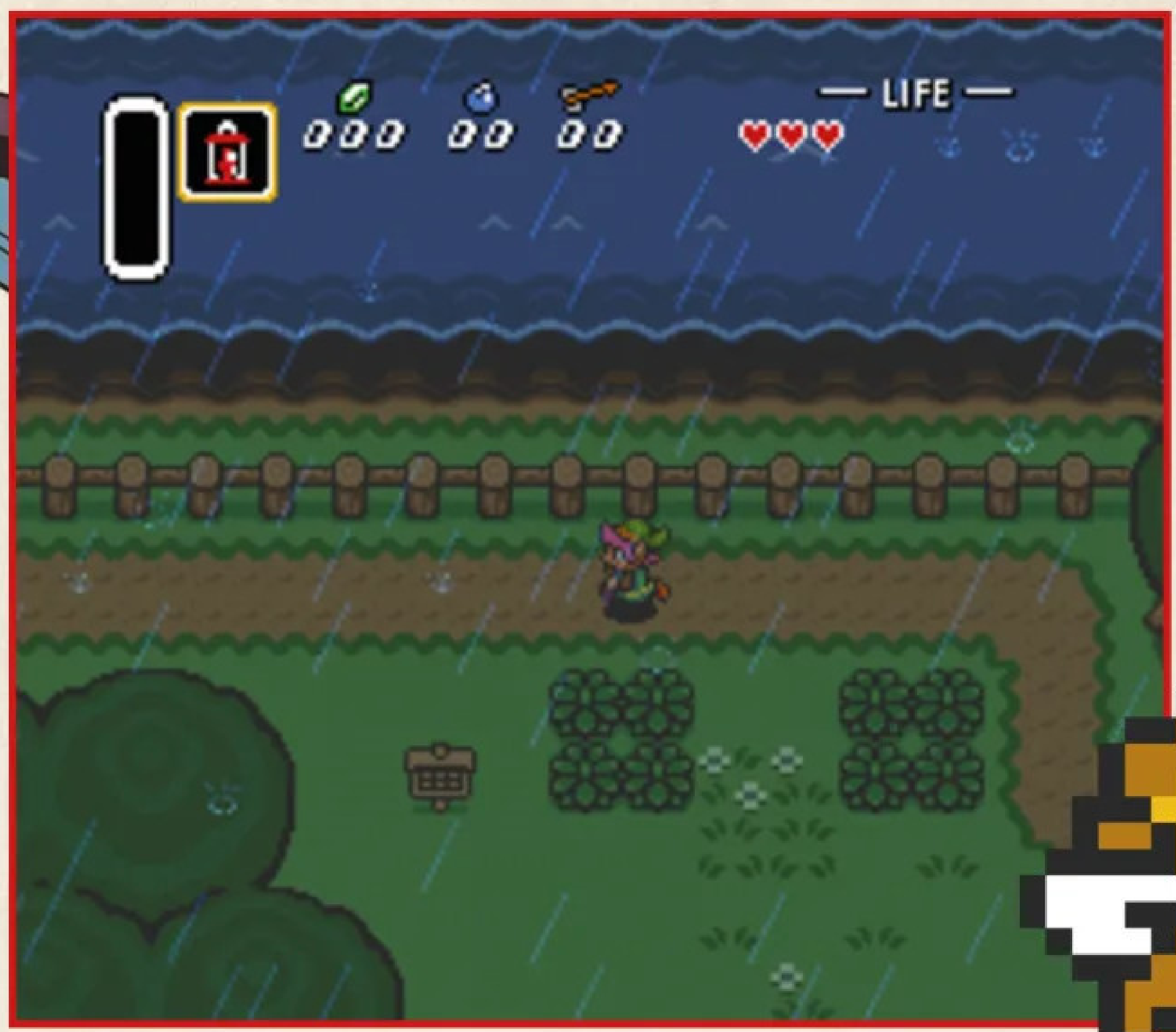
LINK'S 16-BIT DEBUT WAS BOTH A RETURN TO THE ROOTS OF THE SERIES AND A MASSIVE STEP AHEAD OF WHAT HAD GONE BEFORE. JOIN US AS WE LOOK BACK AT ARGUABLY THE BEST 2D GAME IN THE ENTIRE ZELDA SERIES, AND WHAT MADE IT SUCH A SPECIAL ADVENTURE

WORDS BY NICK THORPE

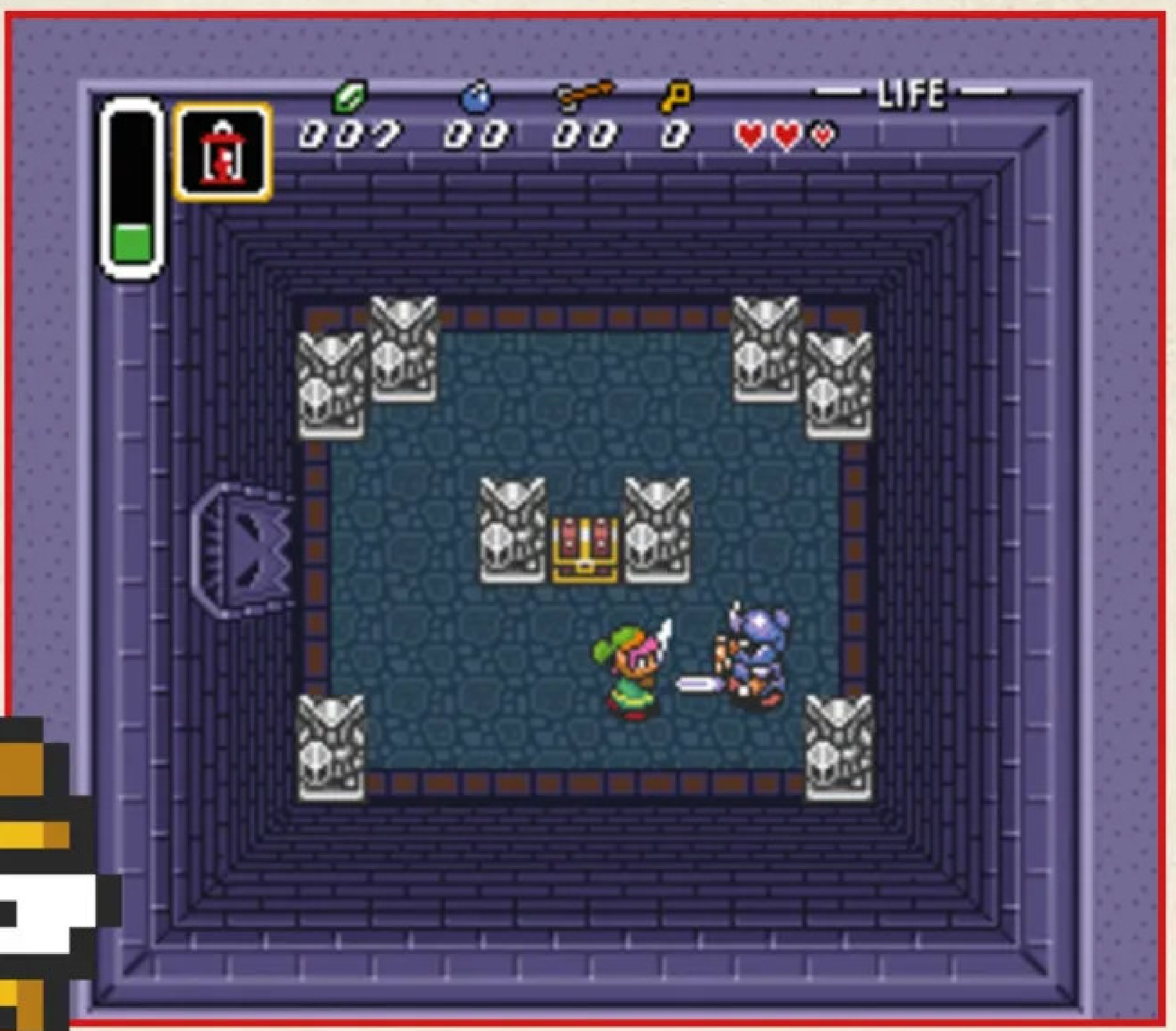


Sometimes developers can make things just a bit tricky for themselves, and even Nintendo is no exception – just take a look at *The Legend Of Zelda: A Link To The Past*. At the beginning of development, the team had to decide what a third *Legend Of Zelda* game should look like. That was a simple goal with no easy solution, as the first two *Zelda* games had played quite differently and each acquired its own followers. Some fans of the first game were not happy with the sequel's change away from the top-down perspective, but players of the second game could well regard a return to that perspective as a step backwards. The third option of creating another radically different game could alienate everyone.

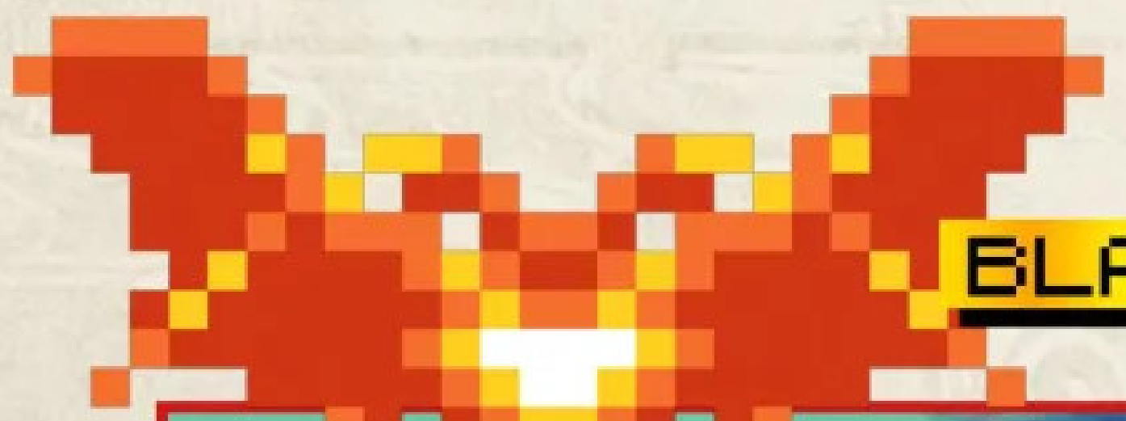
Thankfully, Nintendo could go backwards and forwards at the same time. *The Legend Of Zelda: A Link To The Past* adopted the same perspective as the first game in the series, with the developers believing that this was the best way to represent the Light World and Dark World. However, thanks to the fact that the third *Zelda* adventure was being designed for the SNES, it was a massive step forward in terms of audiovisual quality. The use of sampled instruments allowed for a musical style that more closely fit the style of the adventure, and with a second layer of scrolling graphics



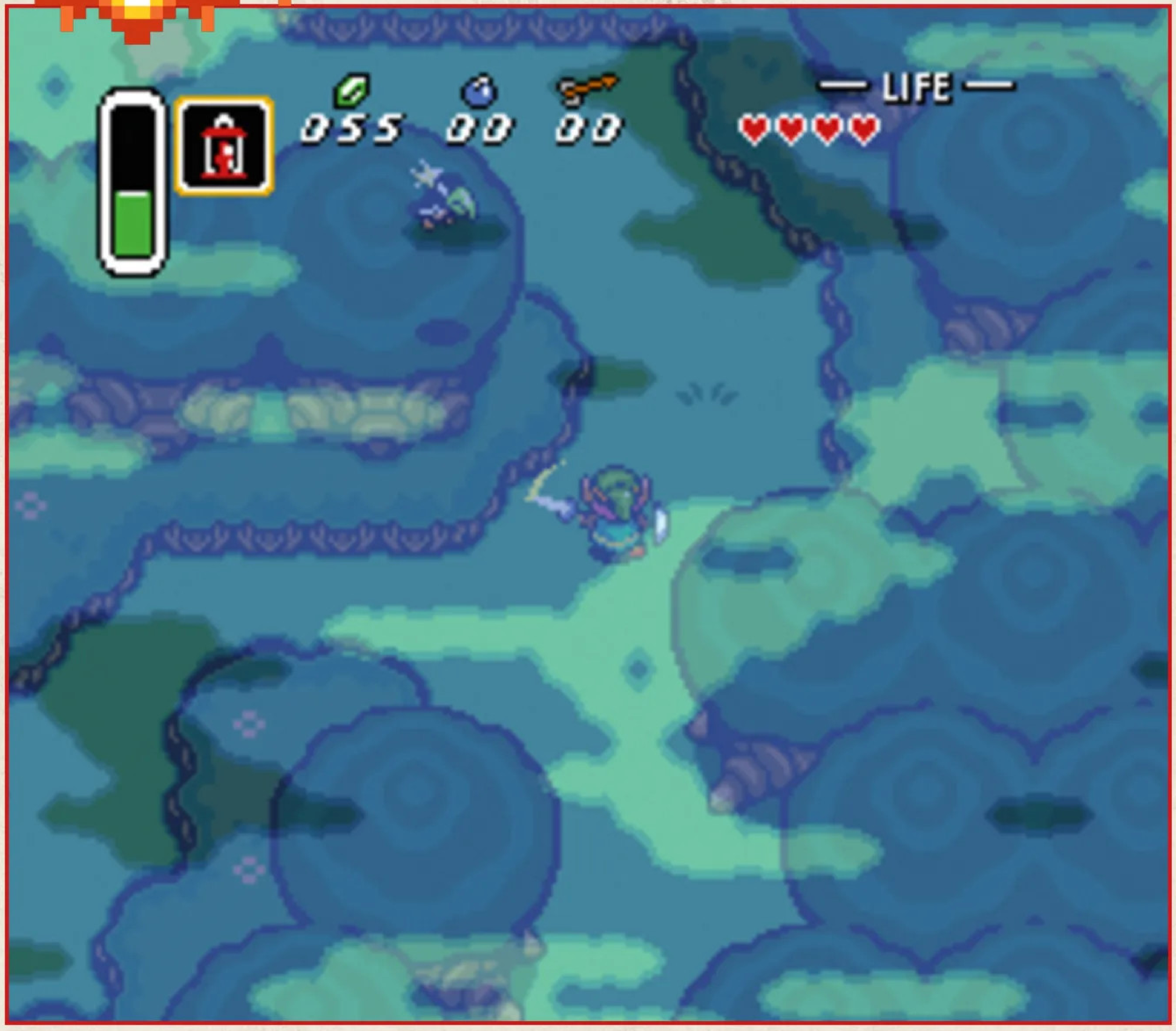
» [SNES] This dramatic rainy intro wouldn't have been possible in the same way without the SNES.



» [SNES] Even in confined spaces, fighting enemies is fairly simple thanks to Link's wide sword swing.



BLAZING BAT



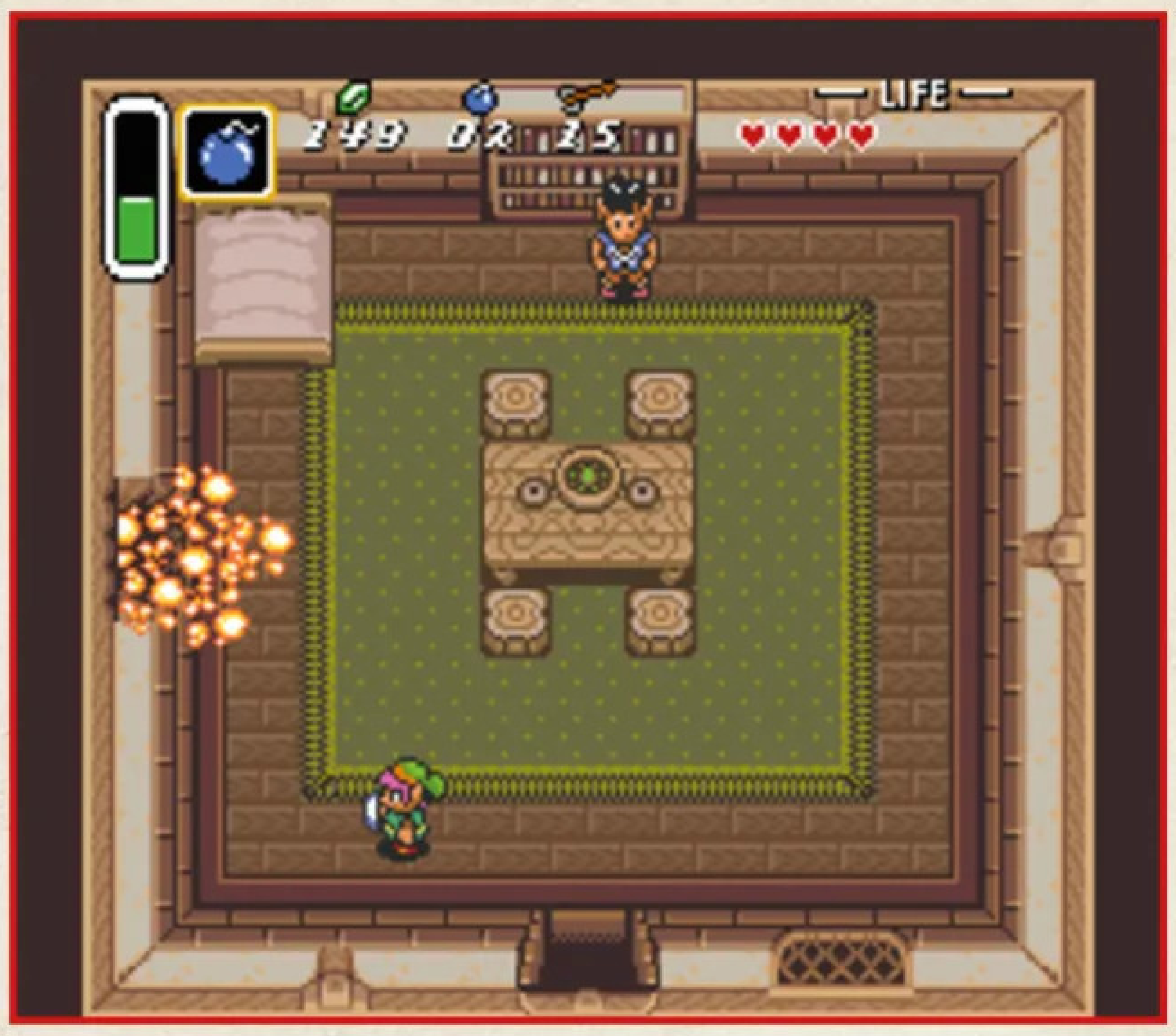
» [SNES] Though it's not the most visually spectacular game most of the time, *A Link To The Past* can dazzle at times.

to work with, Nintendo could add atmospheric effects like transparent mist and pouring rain which wouldn't have been possible on the NES. Even the map screen was given a fancy appearance, thanks to some Mode 7 perspective and zoom effects.

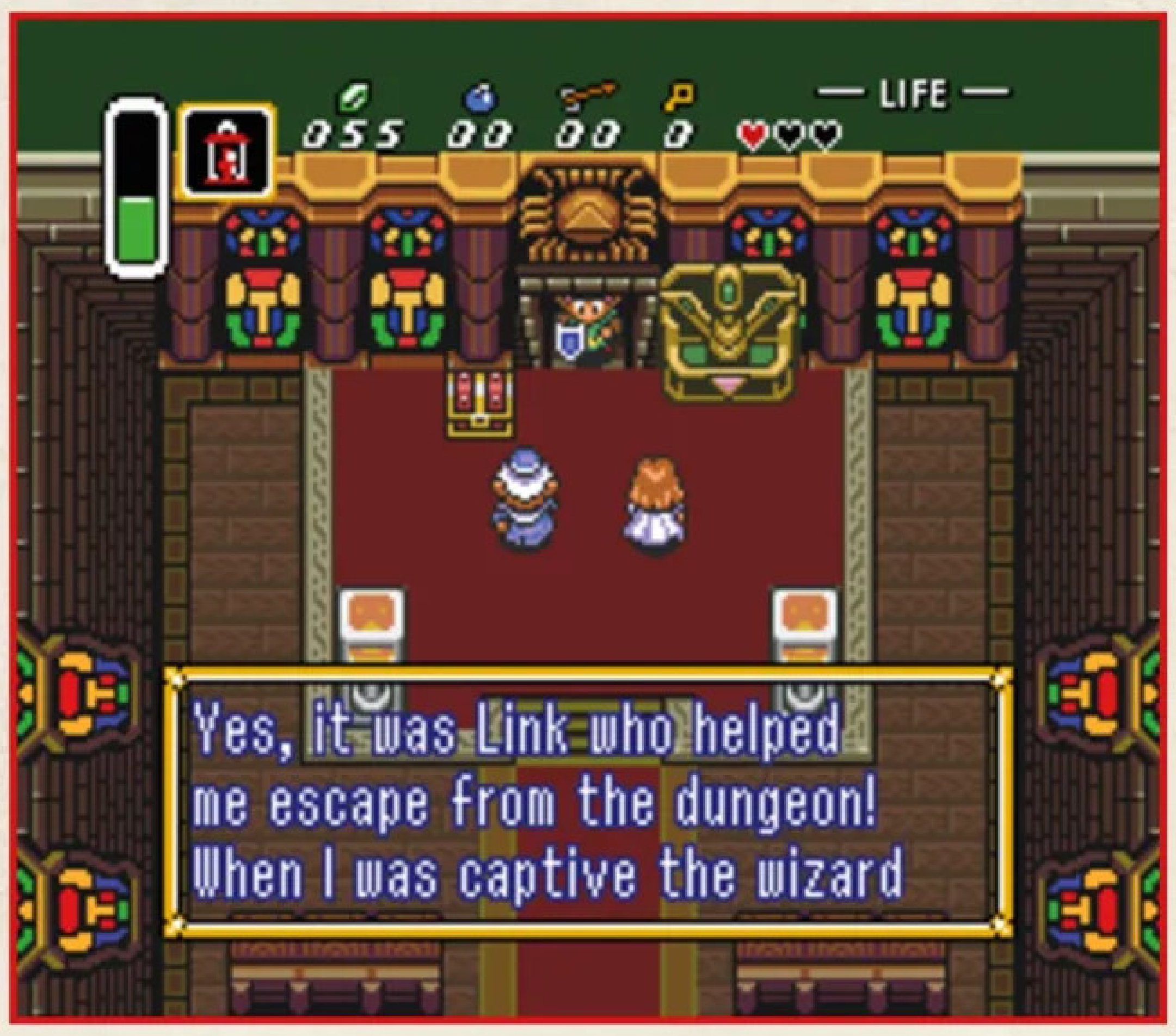
As well as looking and sounding like a major step forward, *A Link To The Past* felt like a big leap ahead in gameplay terms. One of the biggest improvements was the simple addition of diagonal movement, though Link still always faced one of the four cardinal directions when moving – a feature that was intended to aid combat. To that end, an additional animation showed the arc of Link's sword as he swung it, making it easier to judge hits on foes – and if that wasn't enough, the new 360-degree slash ensured a hit. Plenty of new items were introduced too, giving greater variety to both the puzzle and combat elements of the adventure, and quite a few of these, including the Hookshot and Master Sword, would go on to become series staples. What's more, using Link's new items and abilities was made easier just by virtue of having a control pad with more buttons to utilise.

Naturally, this is all just meat and potatoes stuff – after all, if you're playing a *Zelda* game it's because you want to sink your teeth into a good adventure, and Nintendo delivered a real cracker here. The evil wizard Agahnim has ▶

ZELDA



» [SNES] Two brothers live together. They fall out, so one seals the other in his room. What the heck, Nintendo?

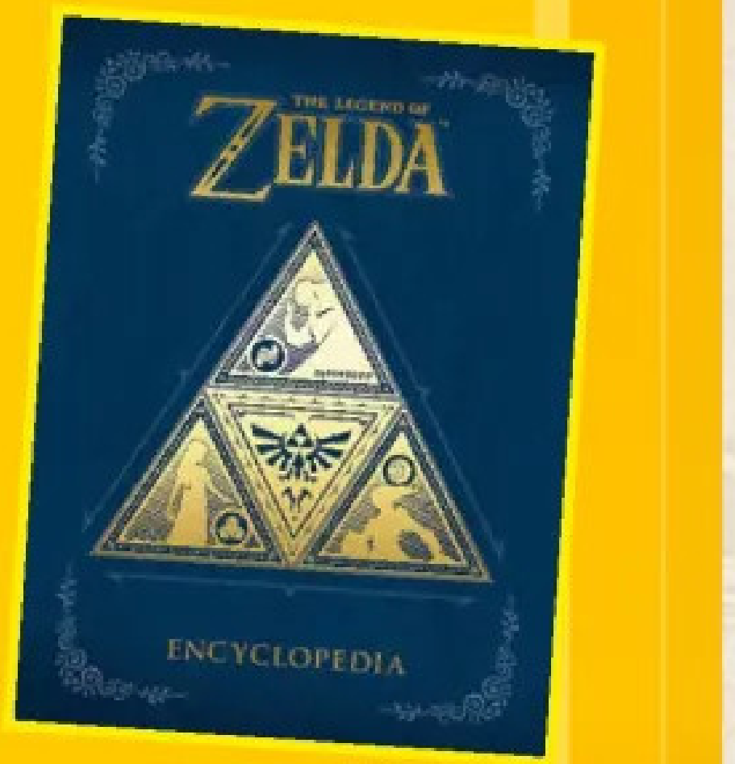


Yes, it was Link who helped
me escape from the dungeon!
When I was captive the wizard

» [SNES] Additional dialogue helps to make the story easier to follow, drawing players into the quest.

WHAT'S THE STORY?

HOW A LINK TO THE PAST FITS INTO THE WIDER ZELDA NARRATIVE

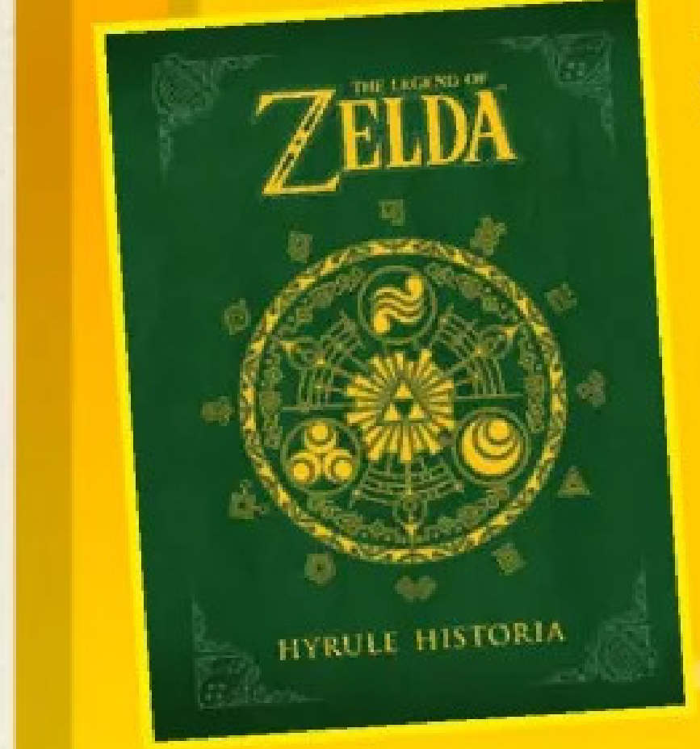


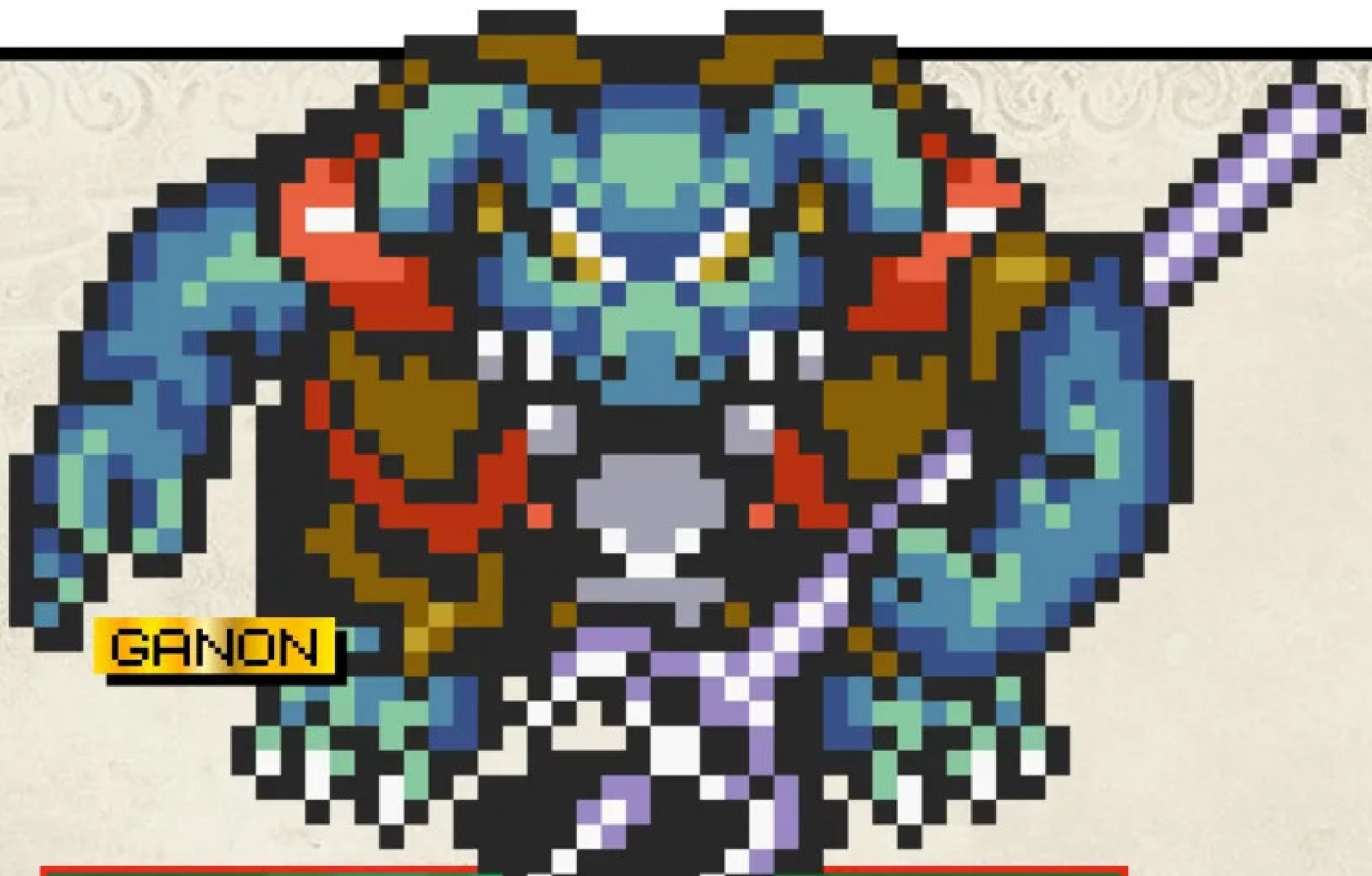
Although Link, Zelda and Ganon are key players in just about every *Zelda* game, each one functions as a self-contained entity – most are wholly distinct from one another, with a new Link who has to learn to be a hero. However, there is a grander tale being told, and *The Legend Of Zelda: A Link To The Past* actually fits into a fairly interesting place in that story according to official Nintendo books such as *The Legend Of Zelda: Hyrule Historia* and *The Legend Of Zelda: Encyclopedia*.

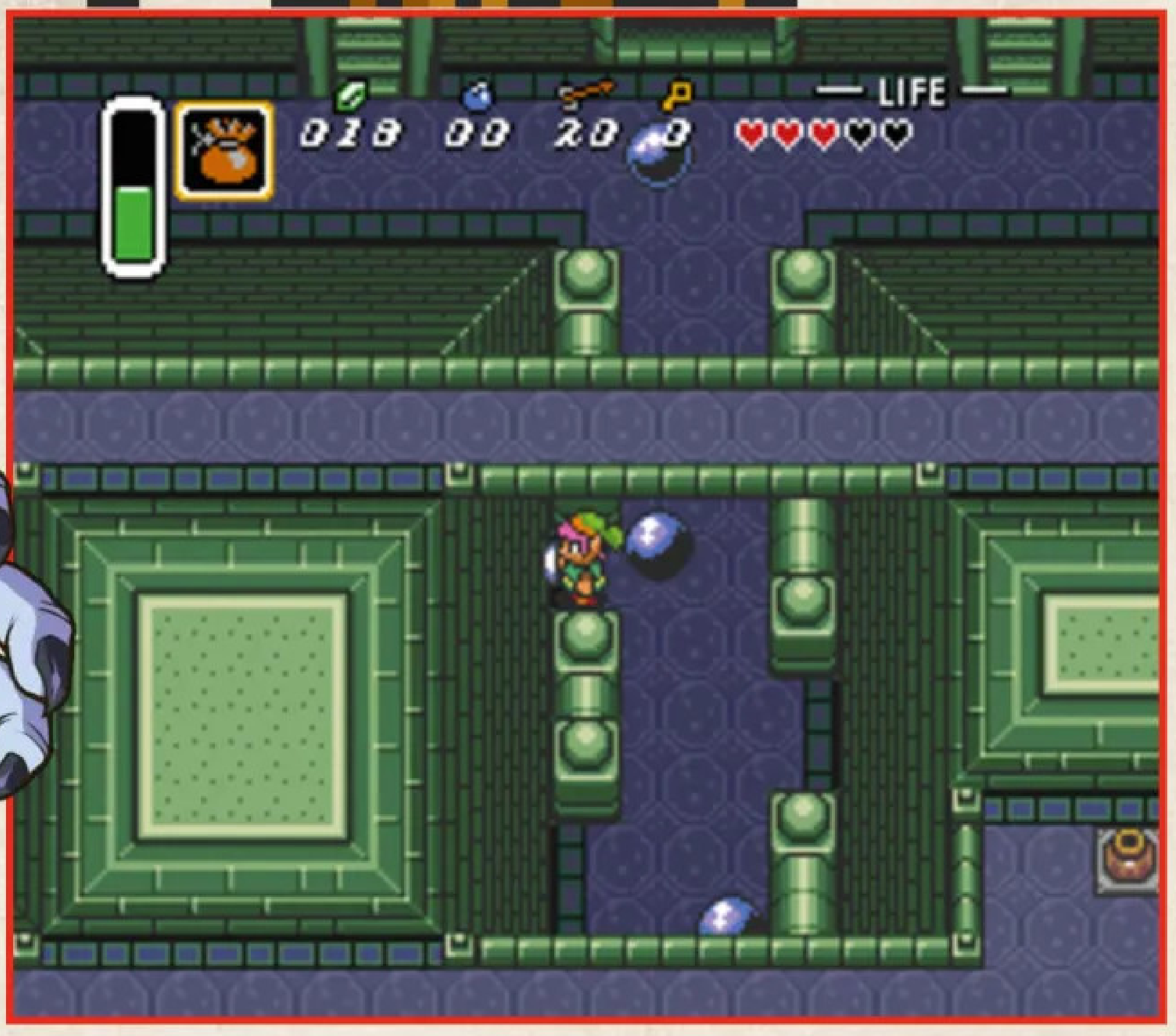
The *Zelda* story has not been released in chronological order, and thus the earliest point in the story is actually seen in a relatively new entry, *The Legend Of Zelda: Skyward Sword*. The timeline remains linear through the events of *The Minish Cap* and *Four Swords*, until a three-way split occurs from *The Ocarina Of Time*. One timeline follows Link back to his own time, and contains games including *Majora's Mask* and *Twilight Princess*, while another follows the world as it exists once Link disappears, leading to the events of *The Wind Waker*.

However, it's the third timeline that interests us here. In this one, Link is defeated by Ganon during the events of *The Ocarina Of Time*, and the seven sages have to seal Ganon away in the Dark World as a last resort. This directly leads to the events of *A Link To The Past*, and *A Link Between Worlds*, *The Legend Of Zelda* and *Zelda II: Link's Adventure* all fall within this branch of the timeline, as do the handheld games *Link's Awakening*, *Oracle Of Ages* and *Oracle Of Seasons*, and *Tri Force Heroes*.

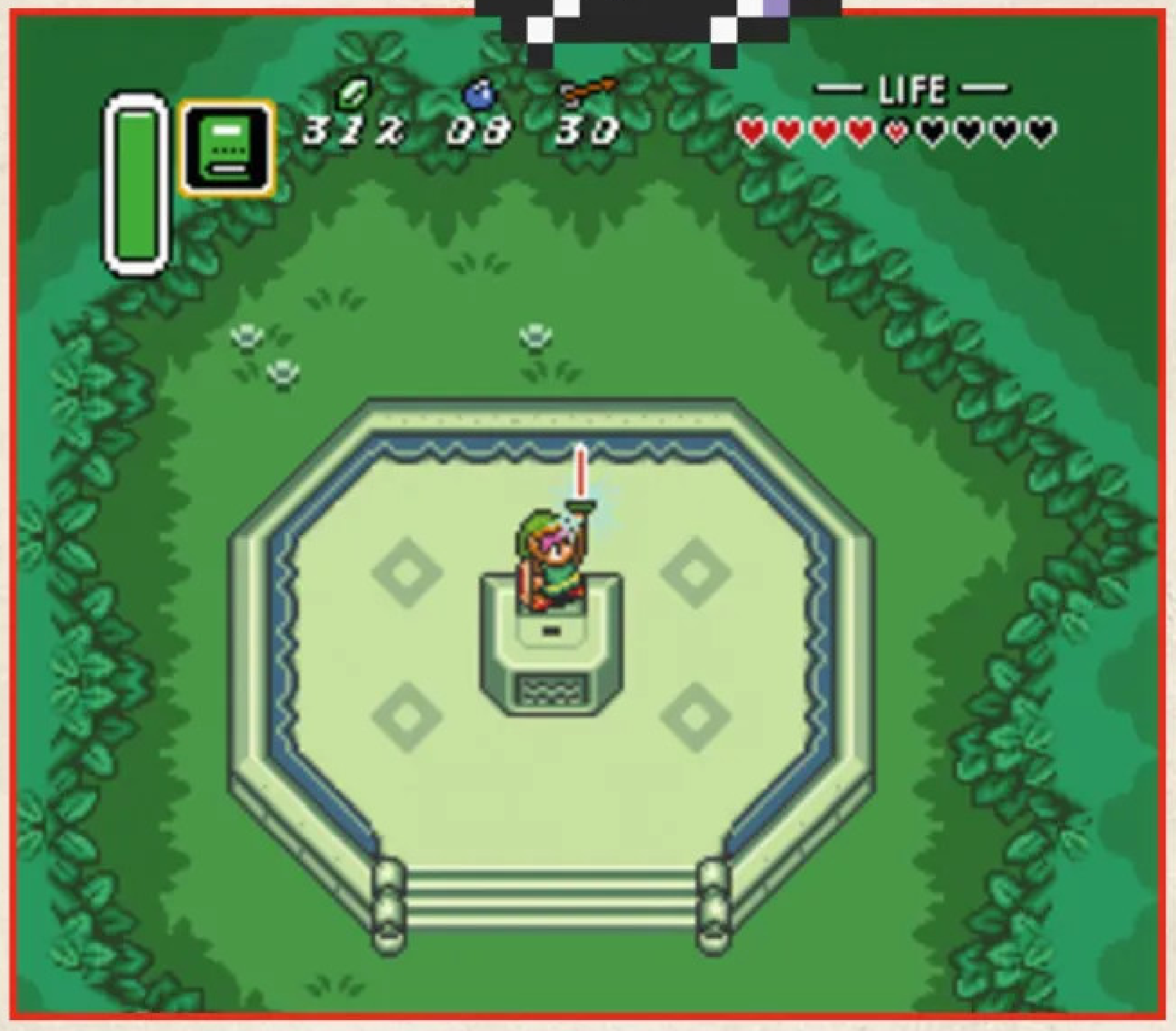
But which is the 'correct' timeline? The official word is that nobody knows. In *The Legend Of Zelda: Breath Of The Wild – Creating A Champion*, the timeline is essentially reset with the claim that the game takes place so far into the future that the events of past games are essentially regarded as myths rather than historical facts. If nobody knows for sure, then all of it is potentially true – including Ganon's triumph and subsequent imprisonment in the Dark World.



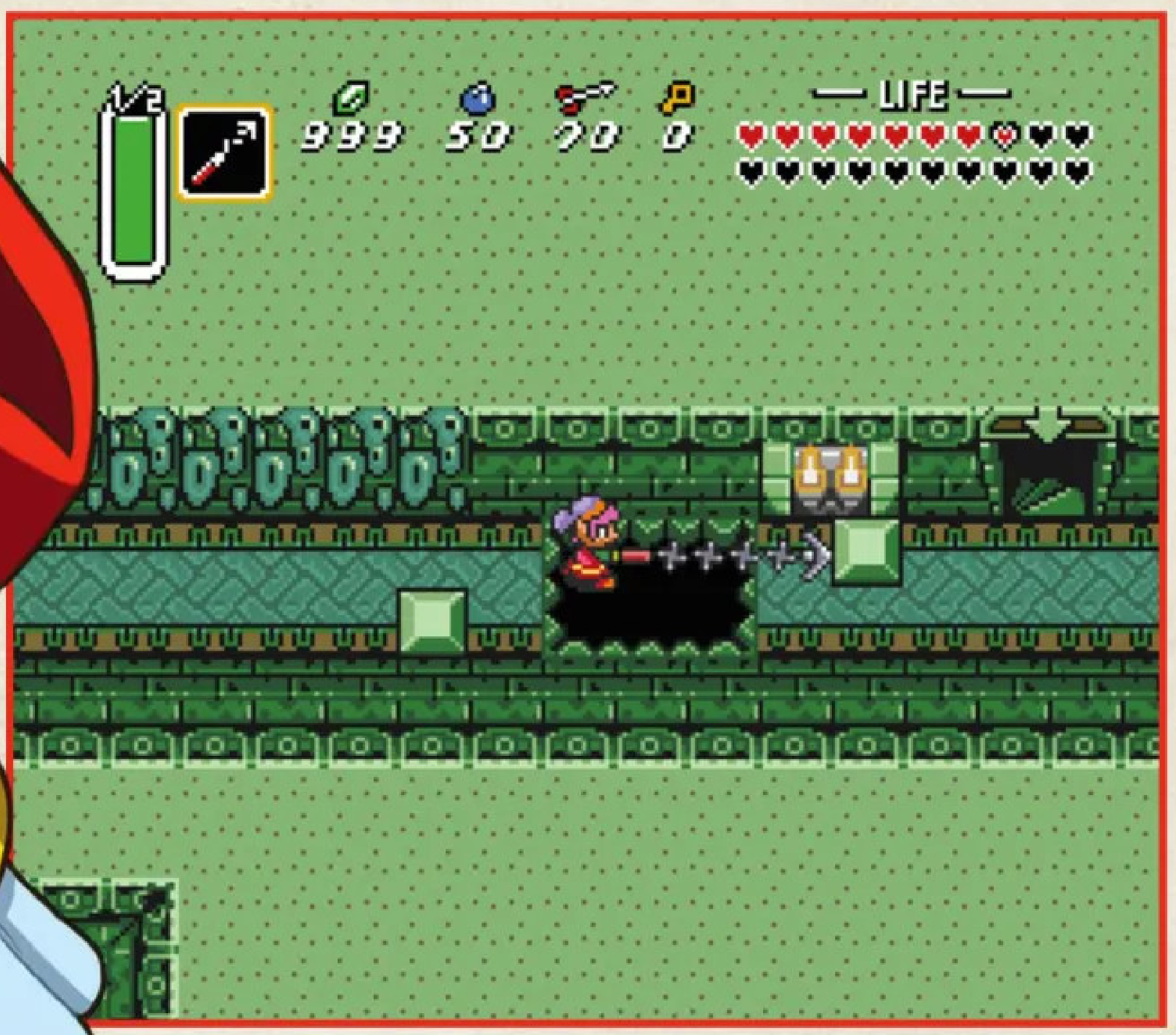




» [SNES] Some of the multi-level dungeon setups were complex and allowed Nintendo to show off the SNES hardware.



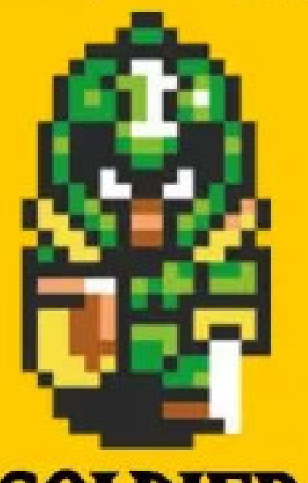
» [SNES] This marks the first appearance of the Master Sword in a *Zelda* game, and finding it is a suitably epic moment.



» [SNES] Plenty of Link's standard adventuring equipment was first seen in this game, including the Hookshot.

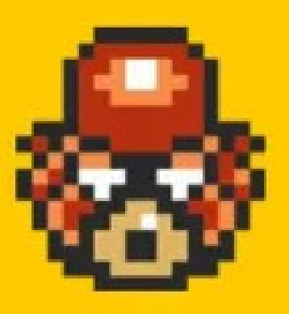
Heh heh… Thank you, young man… Come back to the shop later for something good…

IT'S A DANGEROUS LAND



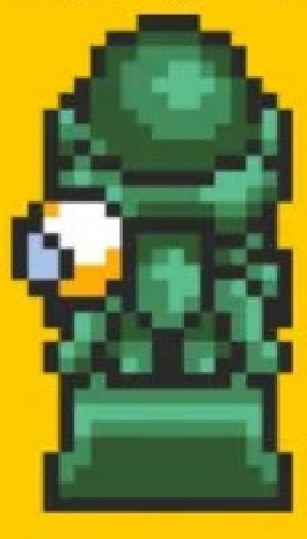
SOLDIER

These chaps are formerly loyal castle guards, corrupted by the influence of Agahnim. They look pretty fierce, but they're actually encountered very early.



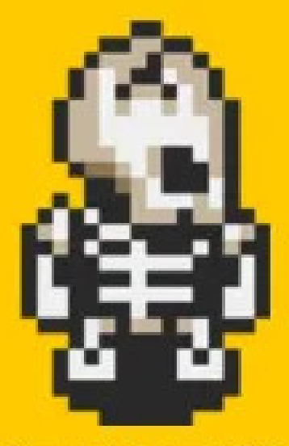
OCTOROK

This classic enemy from past *Zelda* games behaves as it always does, wandering around and shooting projectiles that Link's shield can block.



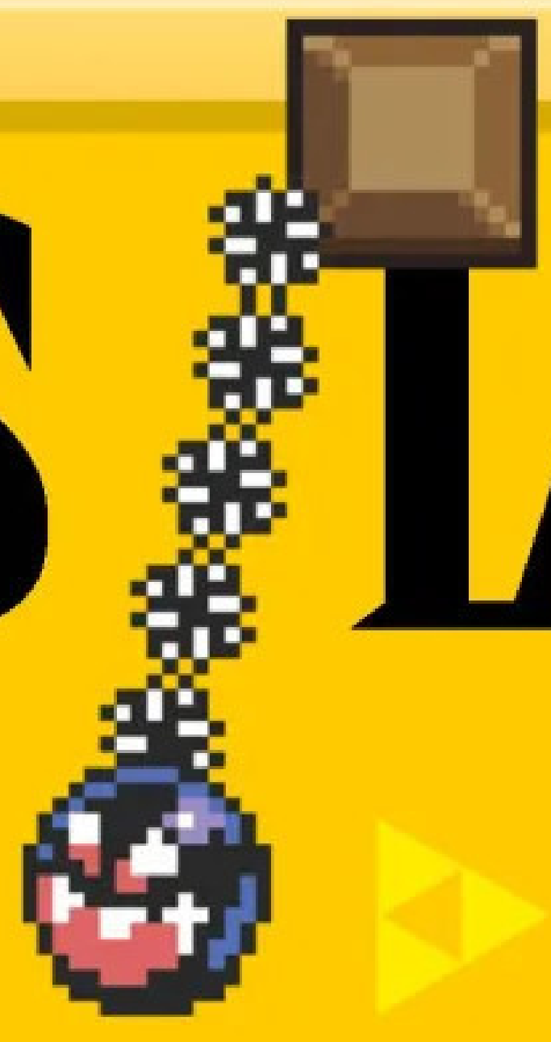
BEAMOS

The eye of the Beamos rotates around that central pillar, and every time it spies a certain hero, it'll fire a laser in his direction.



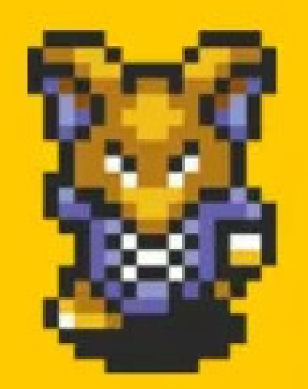
STALFOS

These skeletal troublemakers come in a variety of colours, each indicating how they attack. This one tends to lose its head easily.



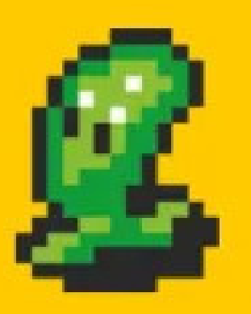
CHAIN CHOMP

You may recognise this enemy from Mario, and the tethered terror is the same as always, bouncing around before attempting to bite Link.



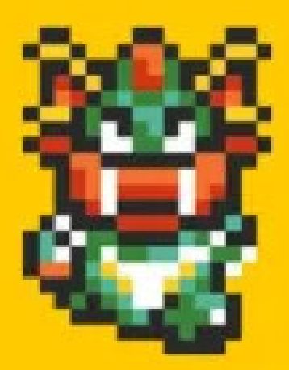
PIKKU

While they won't hurt Link and can't be defeated, Pikku will try to make our green-hooded hero drop his money and items so that they can steal them.



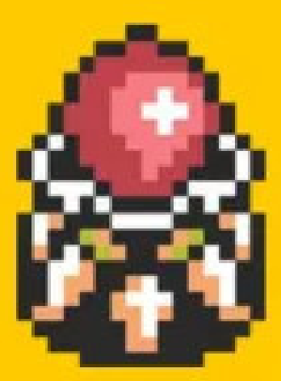
BUZZ BLOB

While the Buzz Blob looks pretty harmless, its electrical charge will zap Link if he tries to attack it with his sword, so stick to ranged weapons.



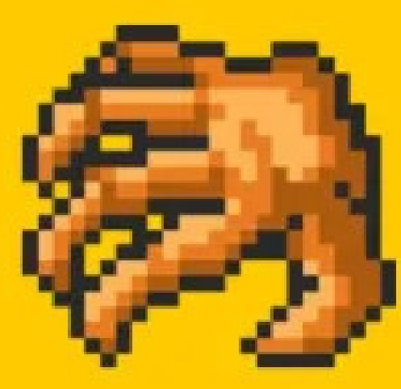
RIVER ZORA

These creatures might live in the water, but a Zora's fiery breath will toast Link if he's yet to acquire the Fire Shield or Mirror Shield.



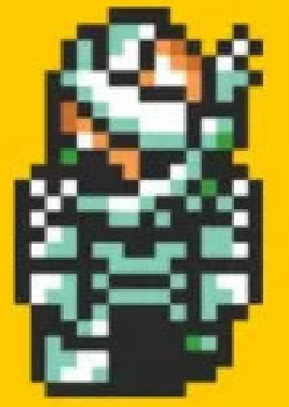
HARDHAT BEETLE

Thanks to its heavy armour, Link will ricochet away if he attacks a Hardhat Beetle with his sword – usually into a nearby chasm, annoyingly.



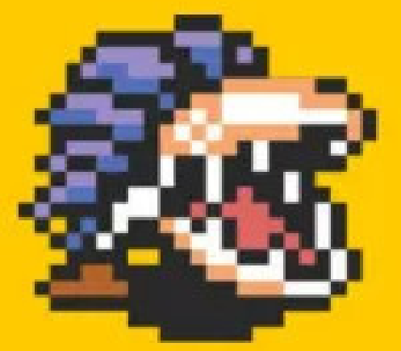
WALLMASTER

Another classic Zelda enemy, and a really irritating one – it'll drop from the ceiling to try to grab Link and return him to the dungeon's entrance.



GIBDO

These undead enemies just mindlessly shamble toward Link, but they're relentless, and they can both dish out and take a whole lot of punishment.



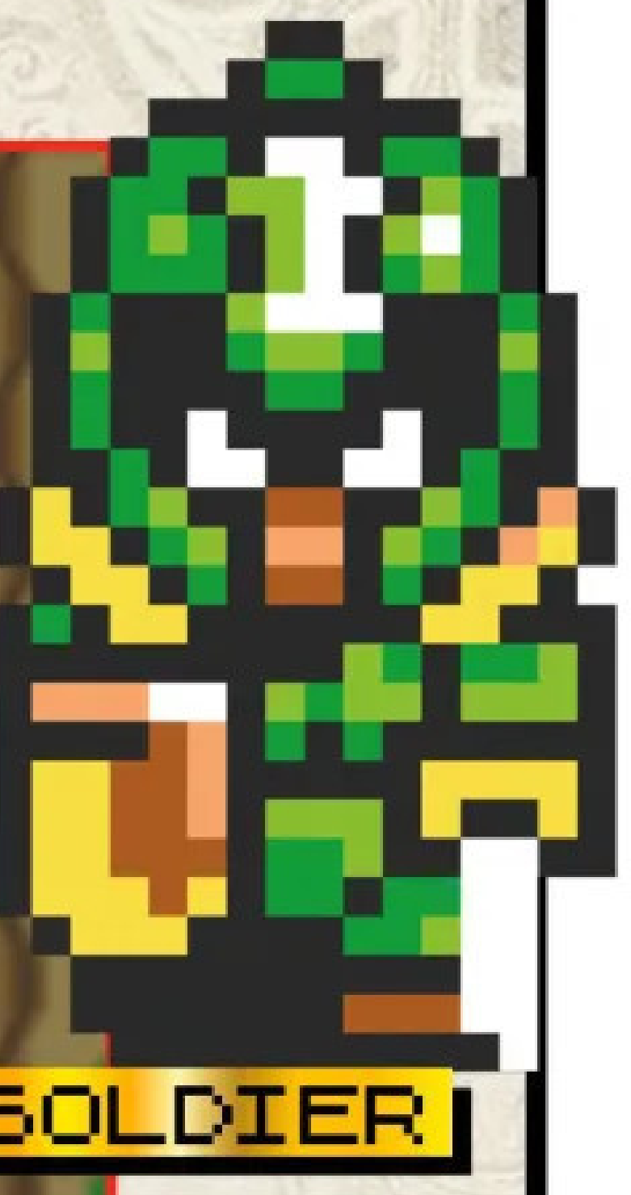
SNAP DRAGON

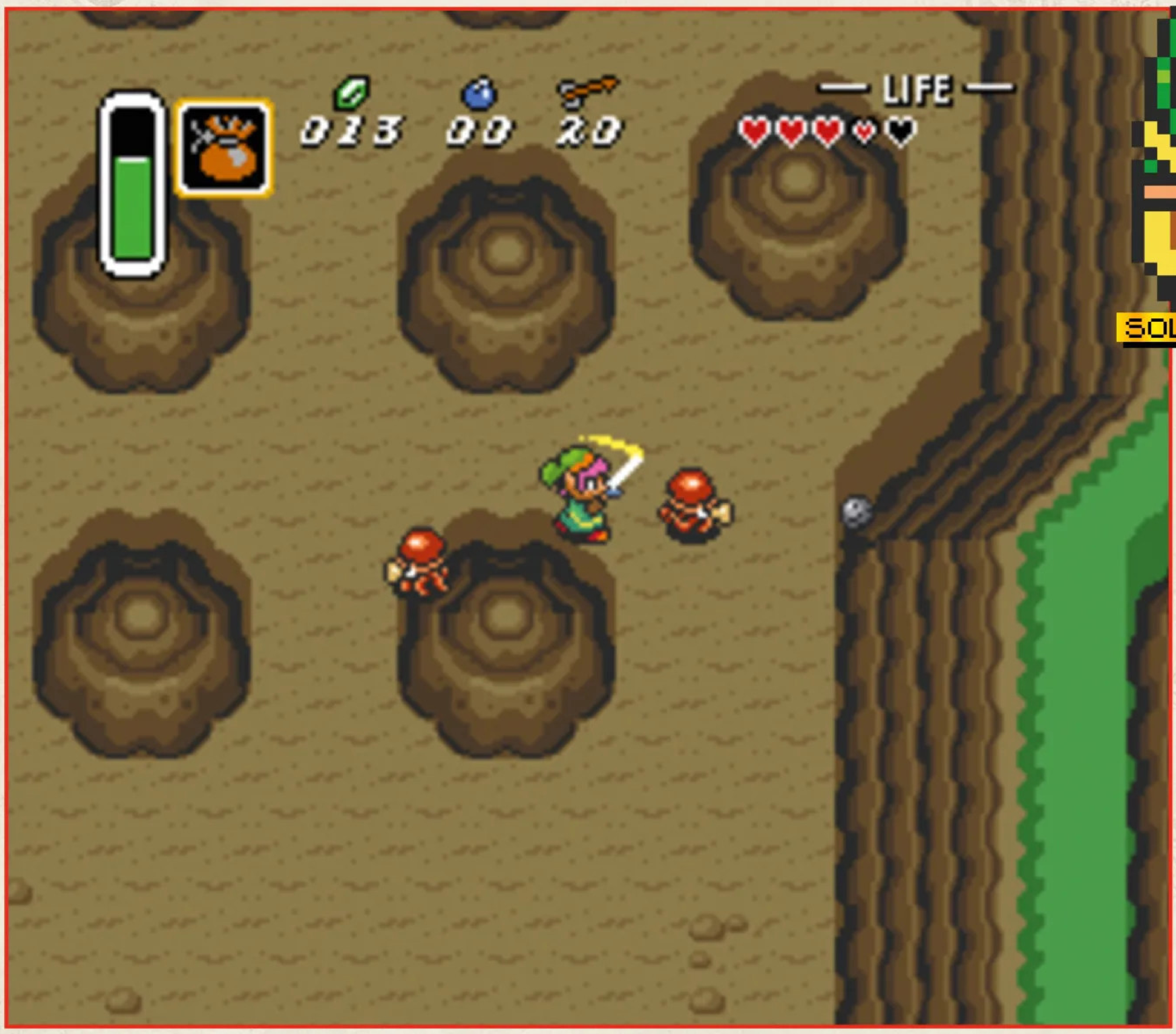
Snap Dragons are disadvantaged by their diagonal-only movement patterns, so approach them from the sides for safety and then give them a taste of your sword.

ZOL

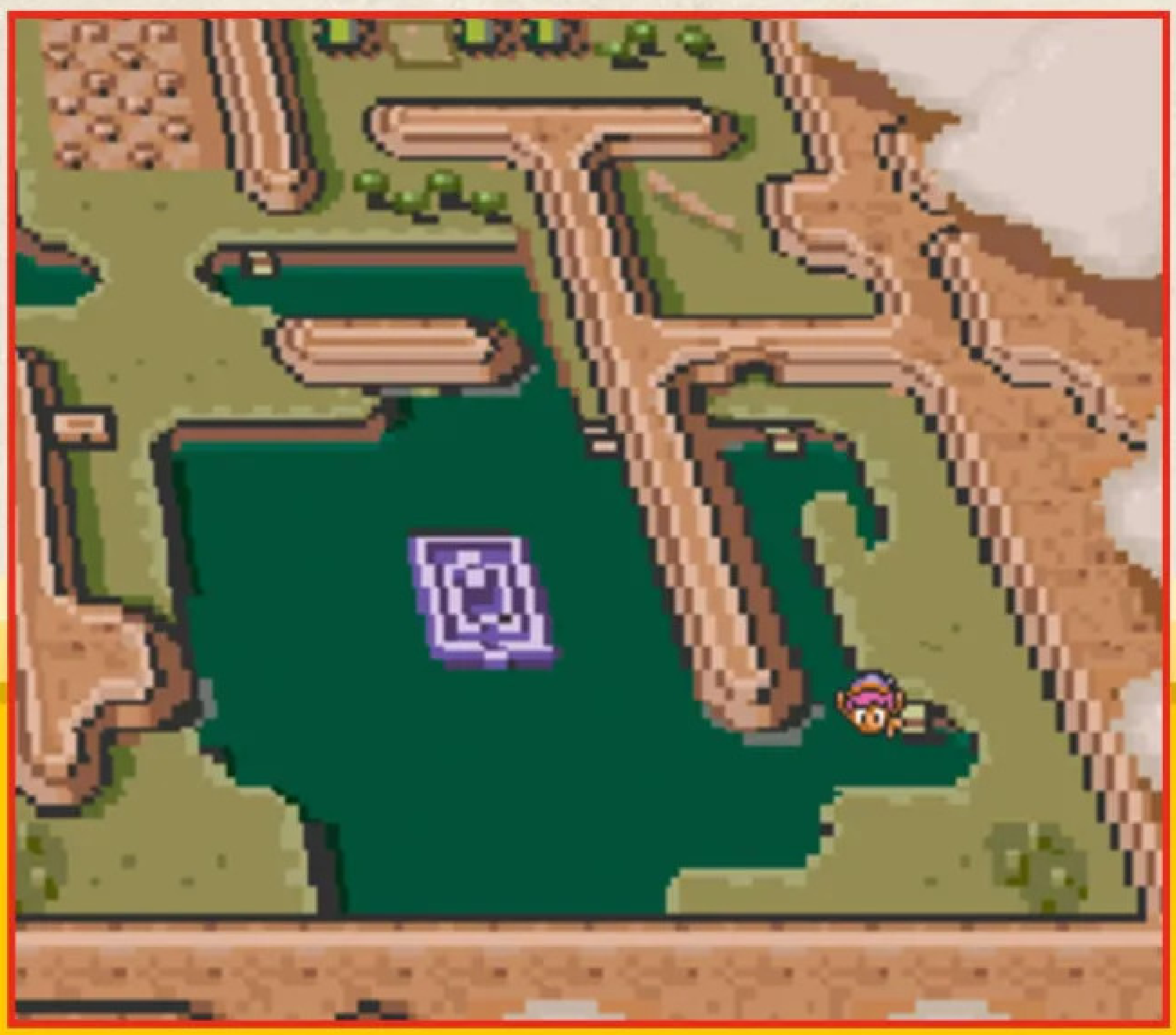
taken control of Hyrule and its soldiers, and has decided to kidnap a whole bunch of people including everyone's favourite princess in distress, Zelda. The rather bold opening saw Link making his way through a rainstorm to Hyrule Castle, guided by the voice of Zelda. It's the kind of scene that feels more like it should take place right at the conclusion of the story, but Nintendo placed it right at the beginning because the tale had plenty more twists and turns to take. This represented another major step forward for the series, in terms of its approach to structure and storytelling. Where the first game had dropped you into a world with very little in the way of instruction, *A Link To The Past* offered a more heavily scripted and ultimately more dramatic introduction.

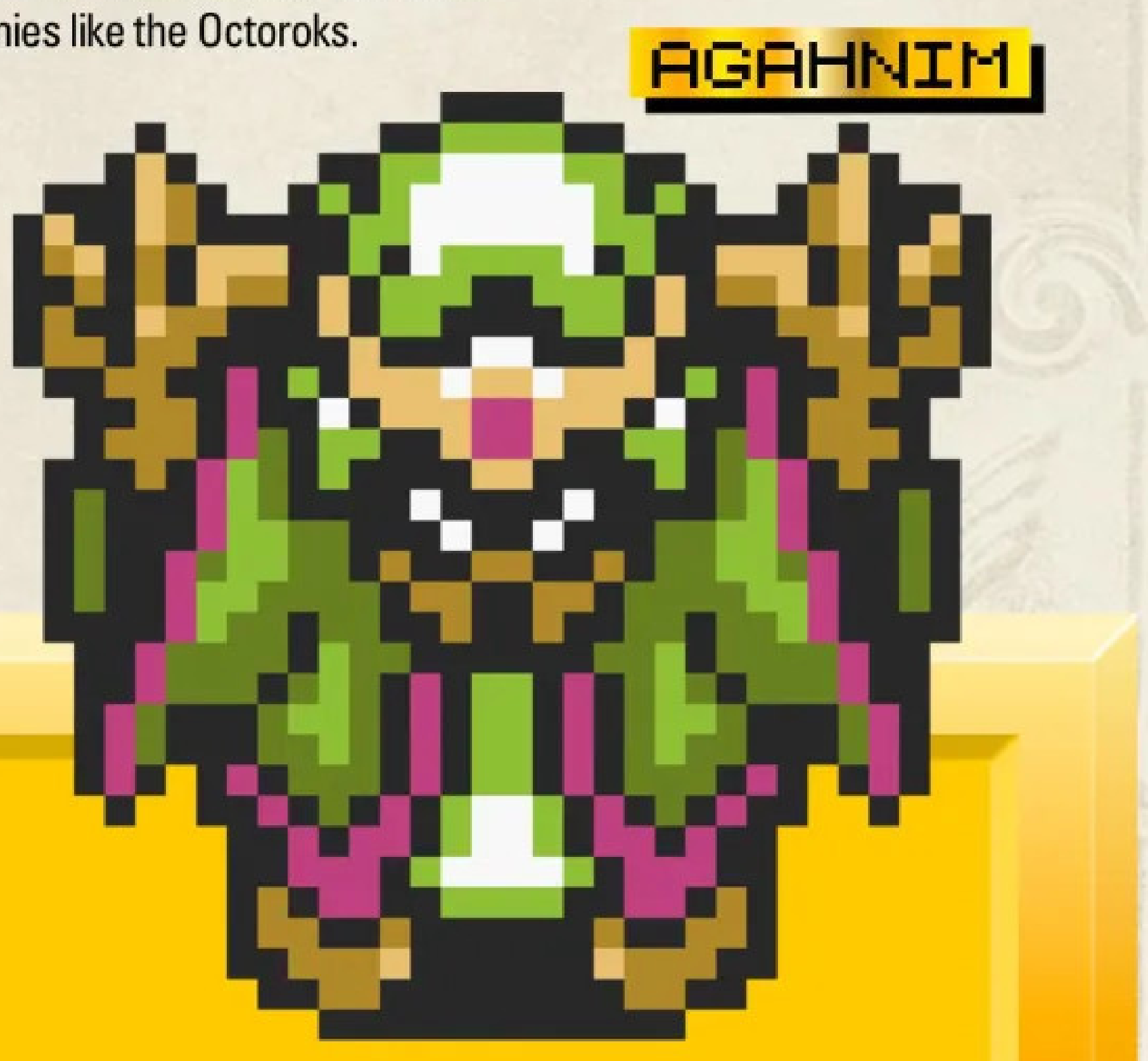
You soon learn that Agahnim's goal is to break the seal that imprisons the series' big baddie Ganon in the Dark World, and proceed to gather pendants to prove Link's heroic qualities before acquiring the Master Sword that allows the destined hero to ward off evil. The additional guidance continued as you went about these tasks, with locations being helpfully marked on your map. Crucially though, you still had the freedom to explore and find the game's many secrets, and even the ability to complete important tasks ahead of time. After a while, you find yourself in conflict with Agahnim, and this too could well have served as a fitting climax. Instead, you find yourself flung into the Dark World and have to rescue the kidnapped victims before confronting Agahnim and eventually Ganon himself. It's a wonderful tale as the stakes seem high to begin with, but Nintendo manages to continue to escalate them without ever feeling like it has crossed the line into absurdity.


SOLDIER

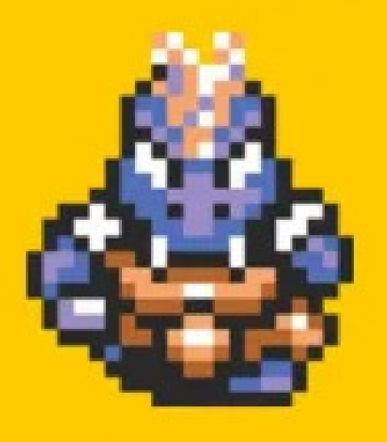


» [SNES] It's interesting to see how Nintendo evolved the looks of classic enemies like the Octoroks.


» [SNES] We're pretty sure this Mode 7 map really was just a way to flex on other console manufacturers.

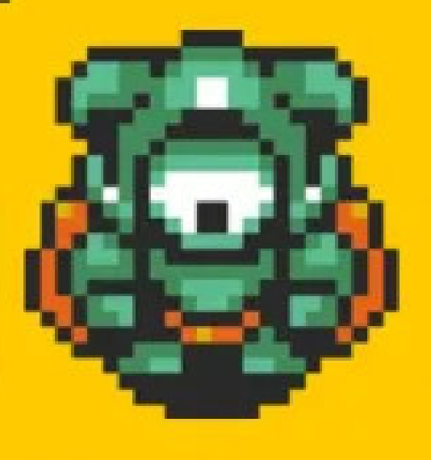

AGAHNIM

LIFE'S NOT EASY FOR A YOUNG ADVENTURER – ESPECIALLY WITH MARAUDING MONSTERS LIKE THESE ON THE LOOSE



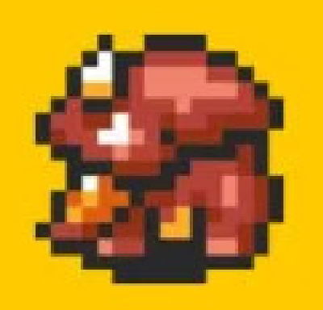
ZAZAK

While blue Zazaks are powerful but fragile, the red ones are tougher, adding strong fireball attacks to their random movement pattern.



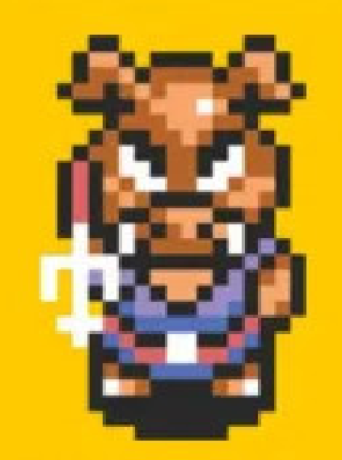
EYEGORE

An Eyegore will stand still until Link draws close, then open its eye and begin to attack. Shooting it in the eye with an arrow works.



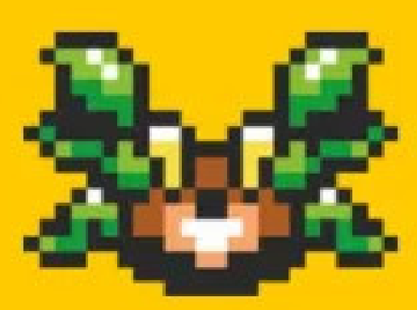
KODONGO

Both red and green versions of these fiery little fellows shoot fireballs, which can cause flaming obstructions when they meet a solid target.



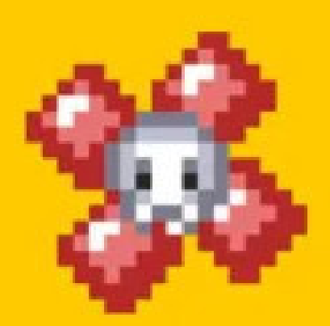
MOBLIN

These are swine soldiers in the image of Ganon himself. Their close-range power is moderate, but their trident attacks are pretty weak.



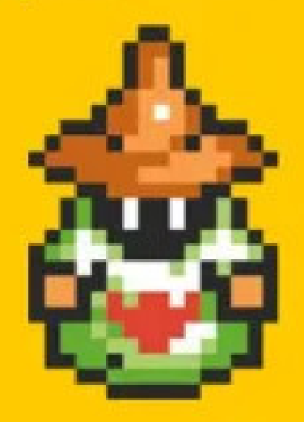
SAND CRAB

These shore-dwelling creatures are quick when moving horizontally and slow otherwise. They can do a decent amount of damage, though.



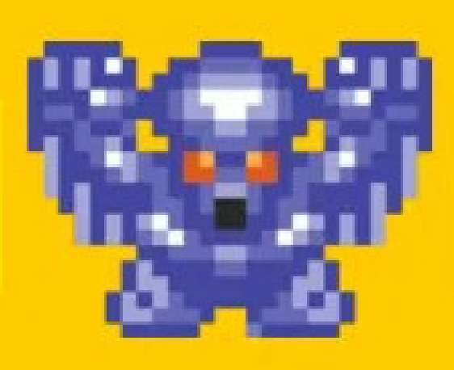
ANTI-FAIRY

These cursed fairies can't be hurt normally, so don't even bother. Instead, sprinkle some Magic Powder on them to turn them into healing fairies.



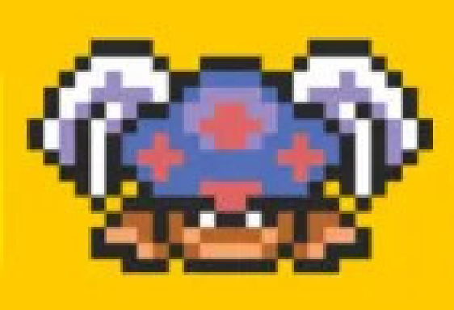
WIZZROBE

Not only can Wizzrobes teleport in and out of battle, they fire some pretty powerful projectiles. Luckily, they're not particularly durable.



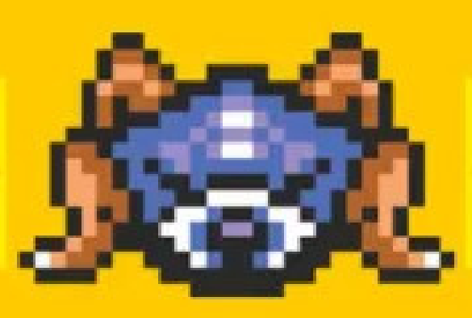
FREEZOR

These powerful enemies look like they're frozen in the wall, and the only way to find out if they are is to walk in front of them. Good luck!



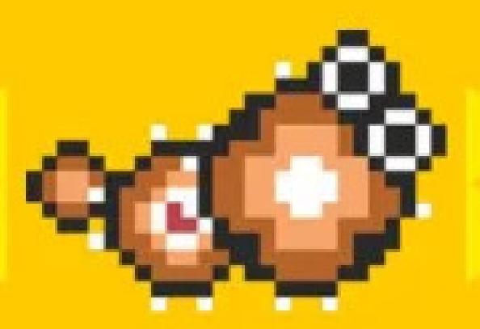
ZIRRO

What could be worse than a flying mushroom? Well, how about a flying mushroom that can spit seed bombs at you from the air?



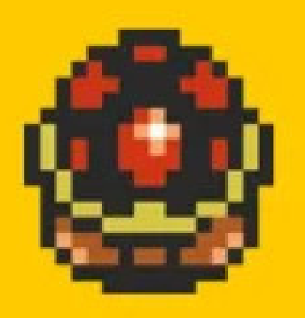
TEKTITE

Defeating these spider-like enemies can be a bit of a nuisance, thanks to their habit of jumping away from Link's sword attacks.



MINI-MOLDORM

Like their big boss mate, these things wriggle around at random and they're quite quick. Avoiding them may be better than attacking.



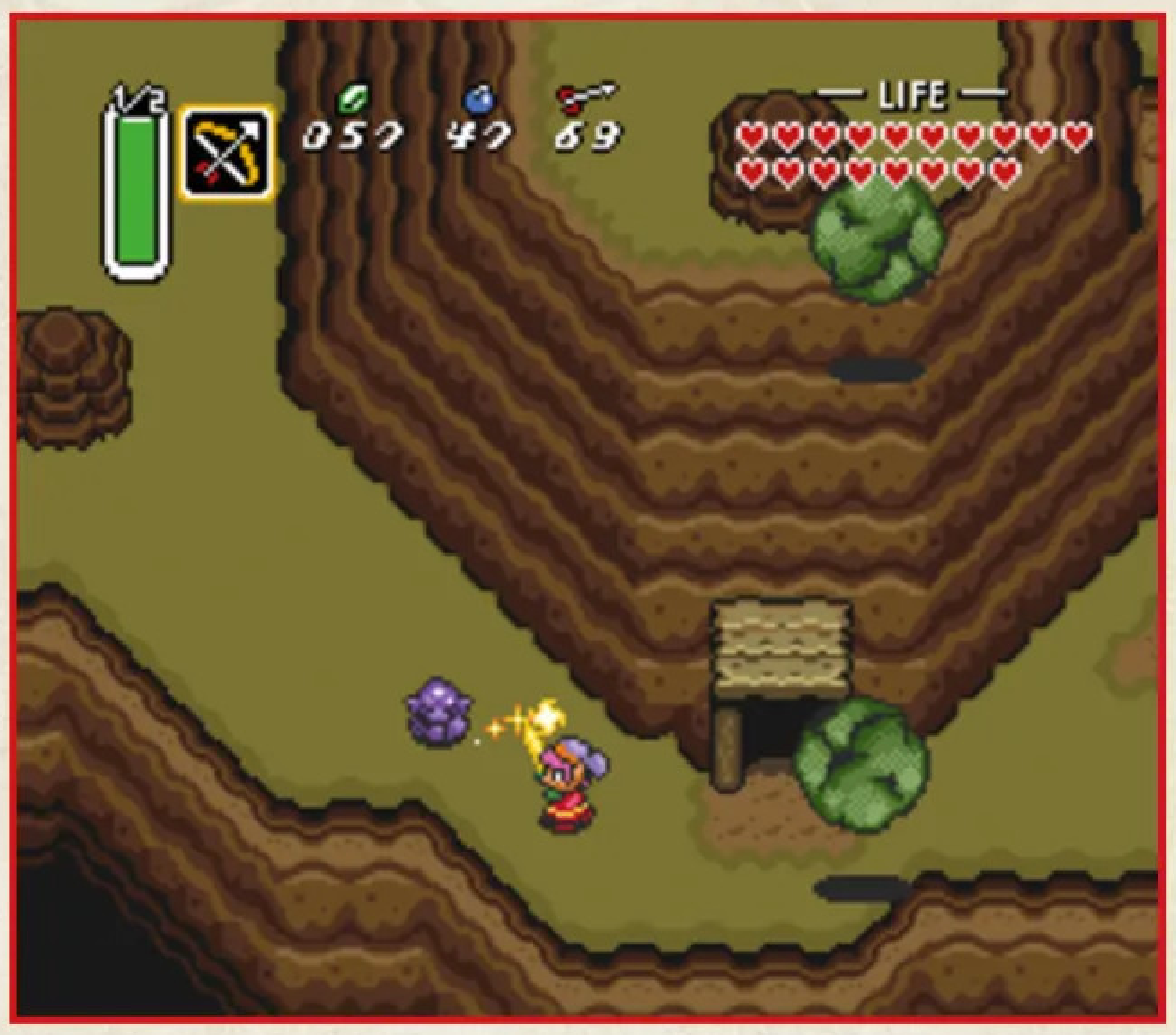
TERRORPIN

If you want to damage this hard case, you'll first need to flip it using the power of the Magic Hammer, to expose its soft and vulnerable underbelly.

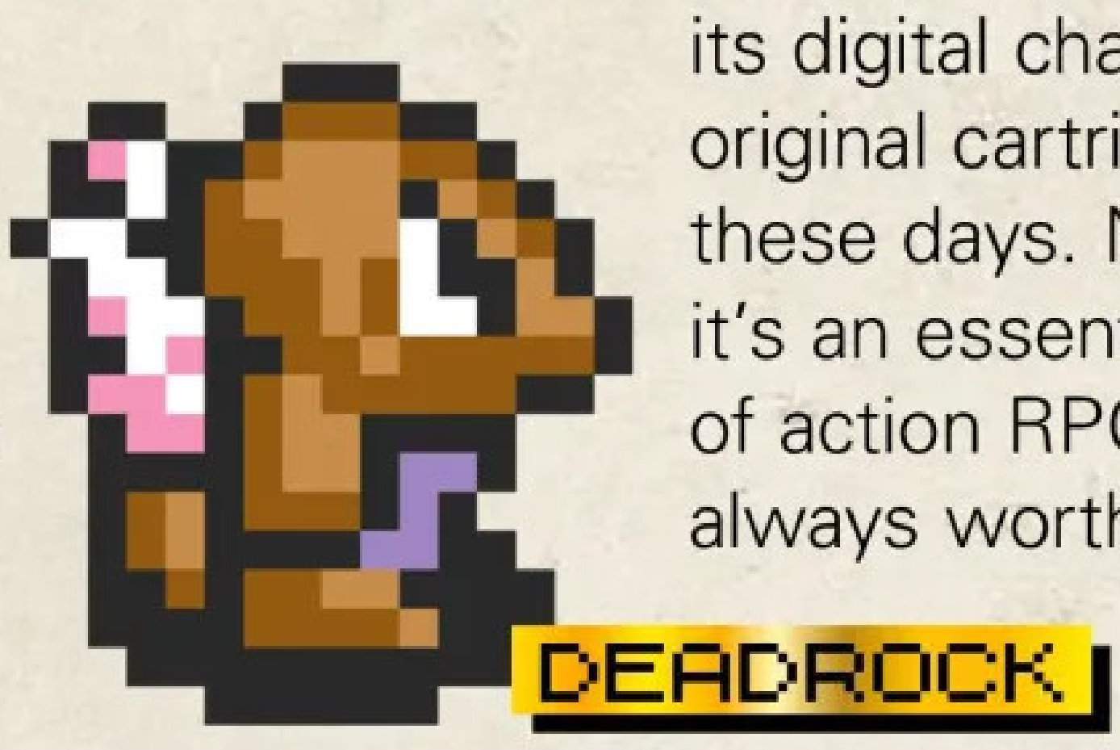
Japanese gamers were the first to experience the third *Zelda* game, which launched on 21 November 1991. The game made its way to North America in April 1992, and finally to Europe in September 1992. *A Link To The Past* was a critical success before it was translated, as the Japanese version earned 95% in a review from *Mean Machines* and 89% from *Computer & Video Games*, the latter of which noted that the game was playable despite the language barrier because "you can complete the game quite happily just by replying yes to any questions". When the English-language version arrived, *Nintendo Magazine System* awarded it a 96% score, with Angus Swan describing it as "a game of enormous depth, excitement, even humour" and praising the "stunningly designed" graphics. *Super Play* gave the game 93%, with Jason Brookes noting that "most of the time you have a pretty good idea of where you should be going, and how to get there", but that this meant "hardened adventurers will race through the game in a week".

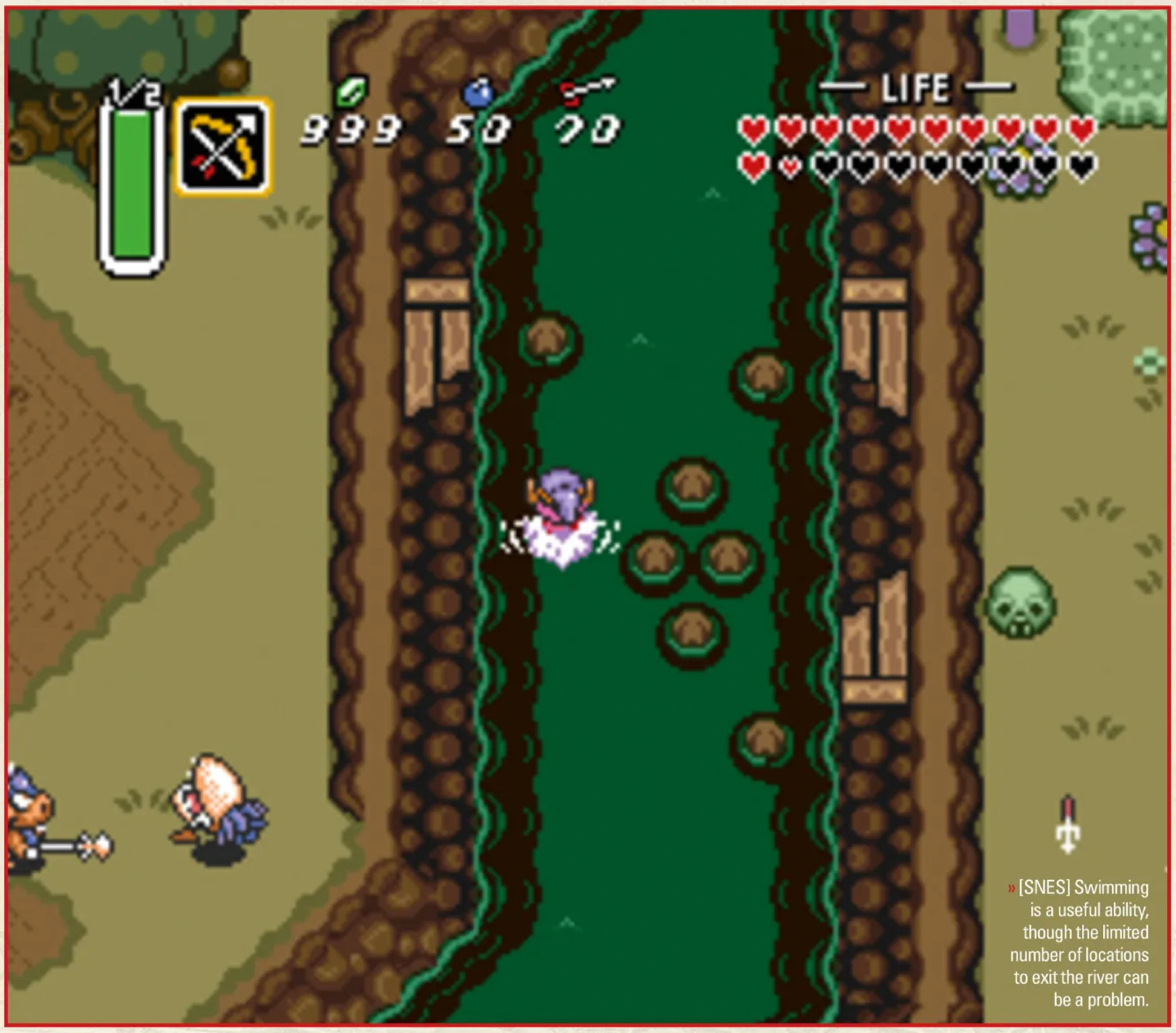
T*he Legend Of Zelda: A Link To The Past* ultimately became the final 2D game to serve as the series' flagship entry. The next game in the series was the Game Boy release *The Legend Of Zelda: Link's Awakening*, and no further games were released for the SNES internationally, though Japanese players did get a couple of spin-offs distributed through the Satellaview download service. When the N64 came around, the rapturous reception to *The Legend Of Zelda: The Ocarina Of Time* ensured that the series continued in 3D, with 2D games essentially sidelined to the handheld formats. Many fans consider *A Link To The Past* as the best of the 2D games as a result, and it's certainly an easy opinion to defend.

Regardless of how you feel about how the game ranks within the *Zelda* series, *A Link To The Past* is undoubtedly a fantastic game. If you've already had the pleasure of playing through it, you might want to try playing it differently – maybe by challenging yourself to best the many speedrunners that have embraced the game, or by using the popular randomiser mod that shuffles the locations of in-game items to reintroduce the thrill of exploration. If you're seeking the game for the first time, Nintendo has consistently kept the game available through its digital channels – which is good, as original cartridges are a bit expensive these days. No matter how you play it, it's an essential adventure for any fan of action RPGs to try, and one that's always worth another play. *



» [SNES] Link's journey can be rocky at times, but never more than when he's being pelted with boulders.

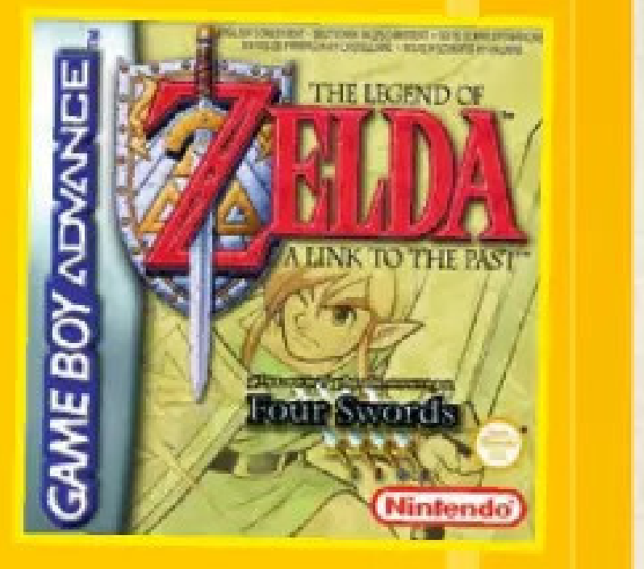




» [SNES] Swimming is a useful ability, though the limited number of locations to exit the river can be a problem.

CONVERSION CAPERS

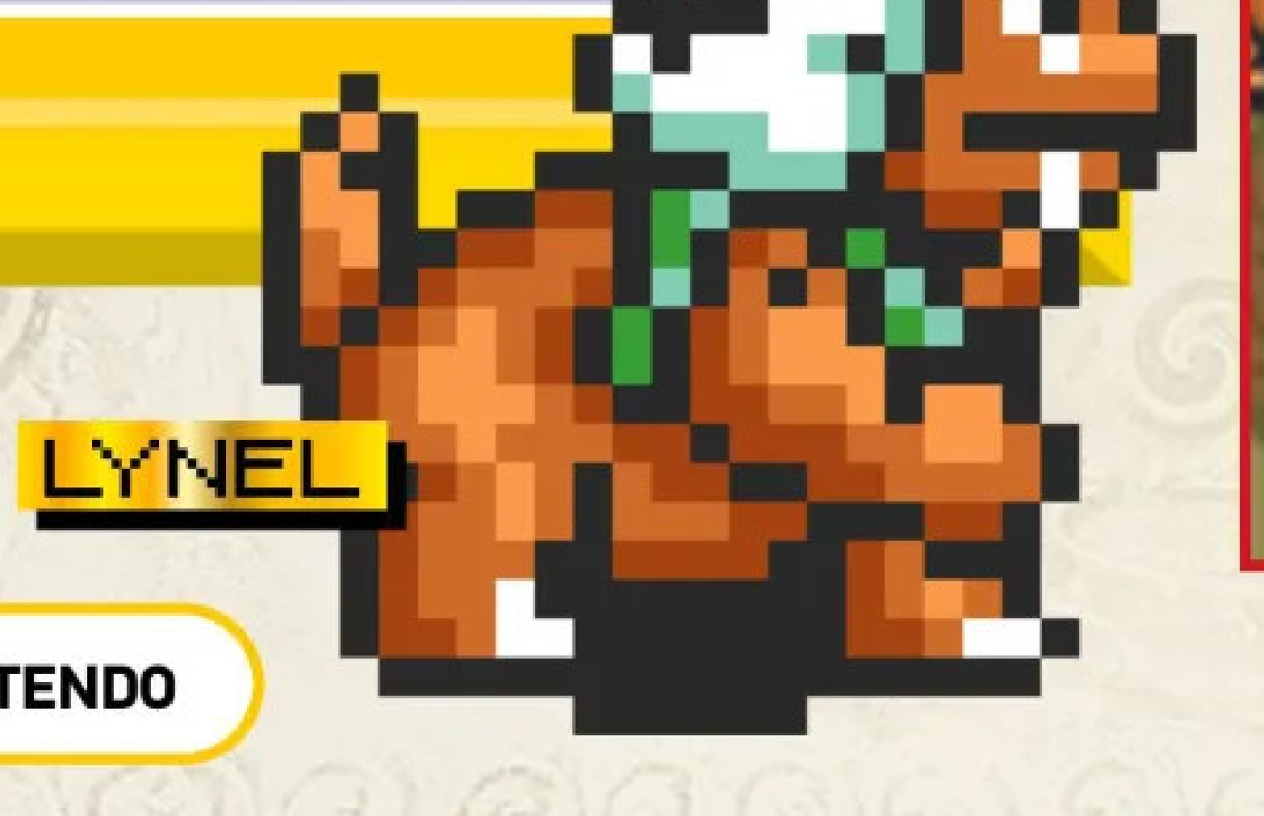
IF YOU'RE ONLY GOING TO DO ONE CONVERSION, MAKING IT AS GOOD AS THIS GAME BOY ADVANCE VERSION IS THE BEST WAY TO GO



For a company with such a rich history, it's surprising that Nintendo has never had a consistent strategy for returning its hits to market. This can be seen in its Game Boy Advance output – while *F-Zero* fans got three brand-new games, those who loved *Mario* platformers had to settle for reheated Super Nintendo games. Zelda occupied an intriguing middle ground, as *The Legend Of Zelda: A Link To The Past* was an old game with some major new features.

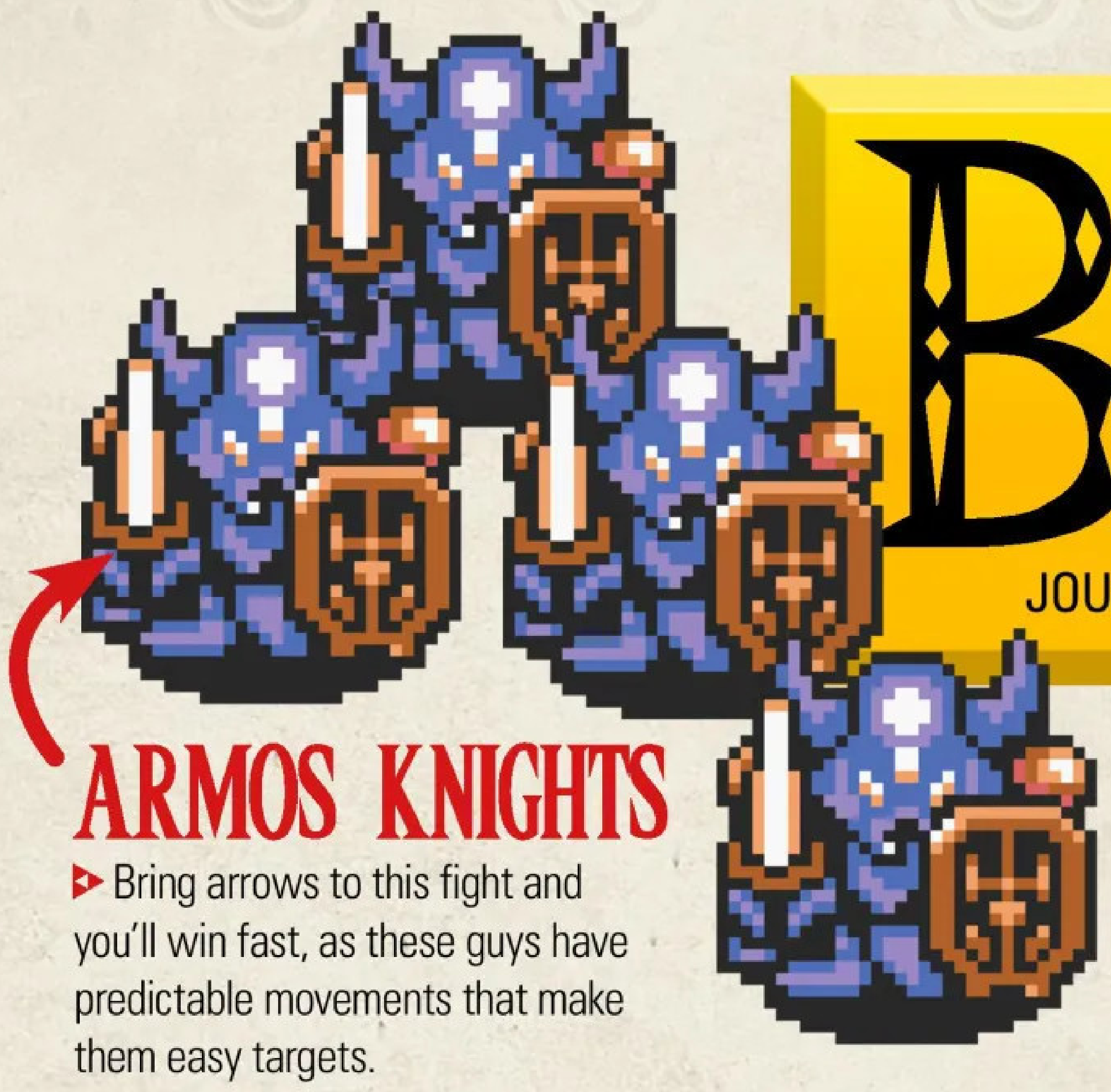
The main game featured a few slight changes to the original SNES classic. New voice effects were brought in from the N64 *Zelda* games, the translation was revised, some bugs were fixed and quality-of-life changes made, and the whole game was retooled to run at the new screen resolution of 240x160. There were also some additional extra treasure rooms and merchants. The bigger difference was the inclusion of a multiplayer mode, Four Swords. This allowed up to four players to link up their Game Boy Advance consoles and take on special dungeons designed specifically for co-op play, with puzzles tailored for the number of players present. Completing this rewarded players with an extra single-player dungeon.

If you're looking for other official options for buying this game, the SNES version is also available via emulation as part of the Nintendo Switch Online subscription service. It was formerly available on the Wii's Virtual Console service, and can still be purchased on the Wii U and 3DS equivalents – though as with all SNES games, the 3DS version is only for owners of New Nintendo 3DS hardware. It's also available as one of the 21 games on the Nintendo Classic Mini: SNES. None of these versions have any significant differences from the SNES original.



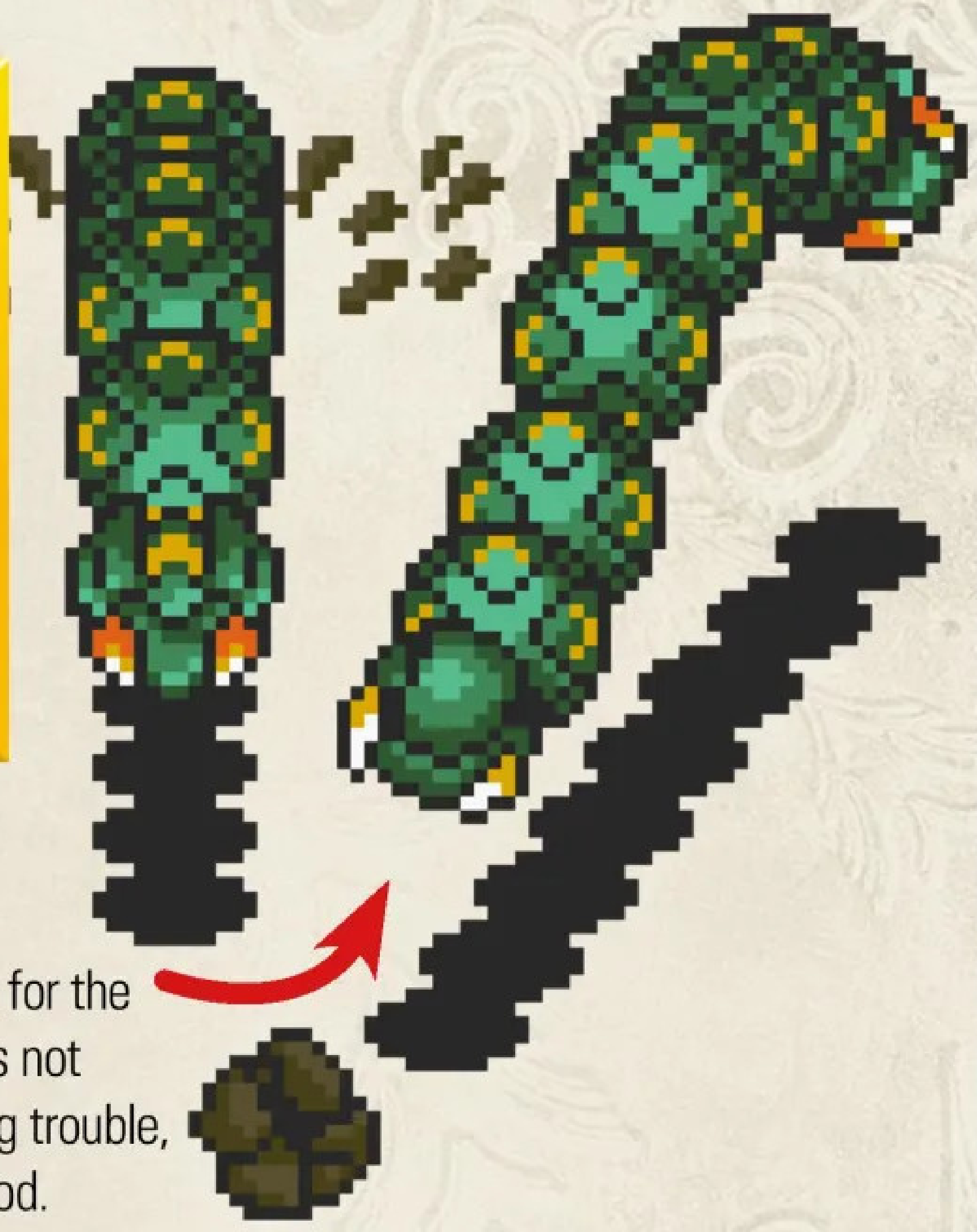
BOSS RUSH

LINK ENCOUNTERS PLENTY OF HOSTILITY ON HIS JOURNEY, BUT THESE ARE THE MOST VICIOUS VILLAINS OF THE LOT



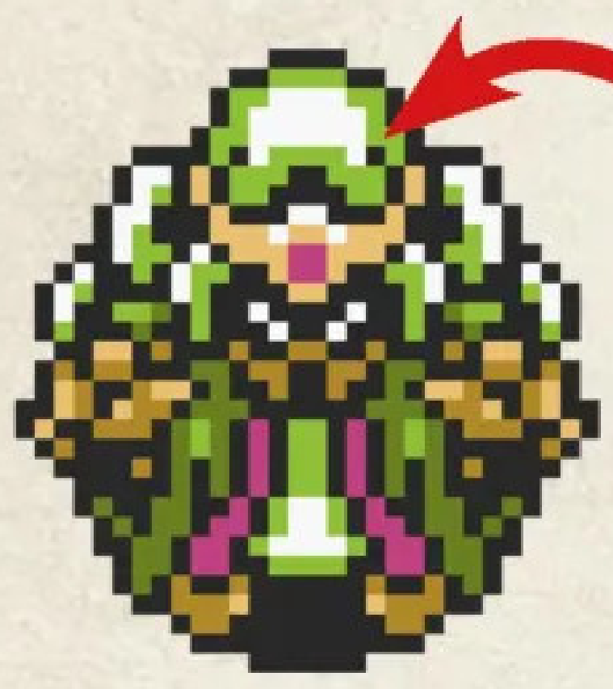
ARMOS KNIGHTS

▶ Bring arrows to this fight and you'll win fast, as these guys have predictable movements that make them easy targets.



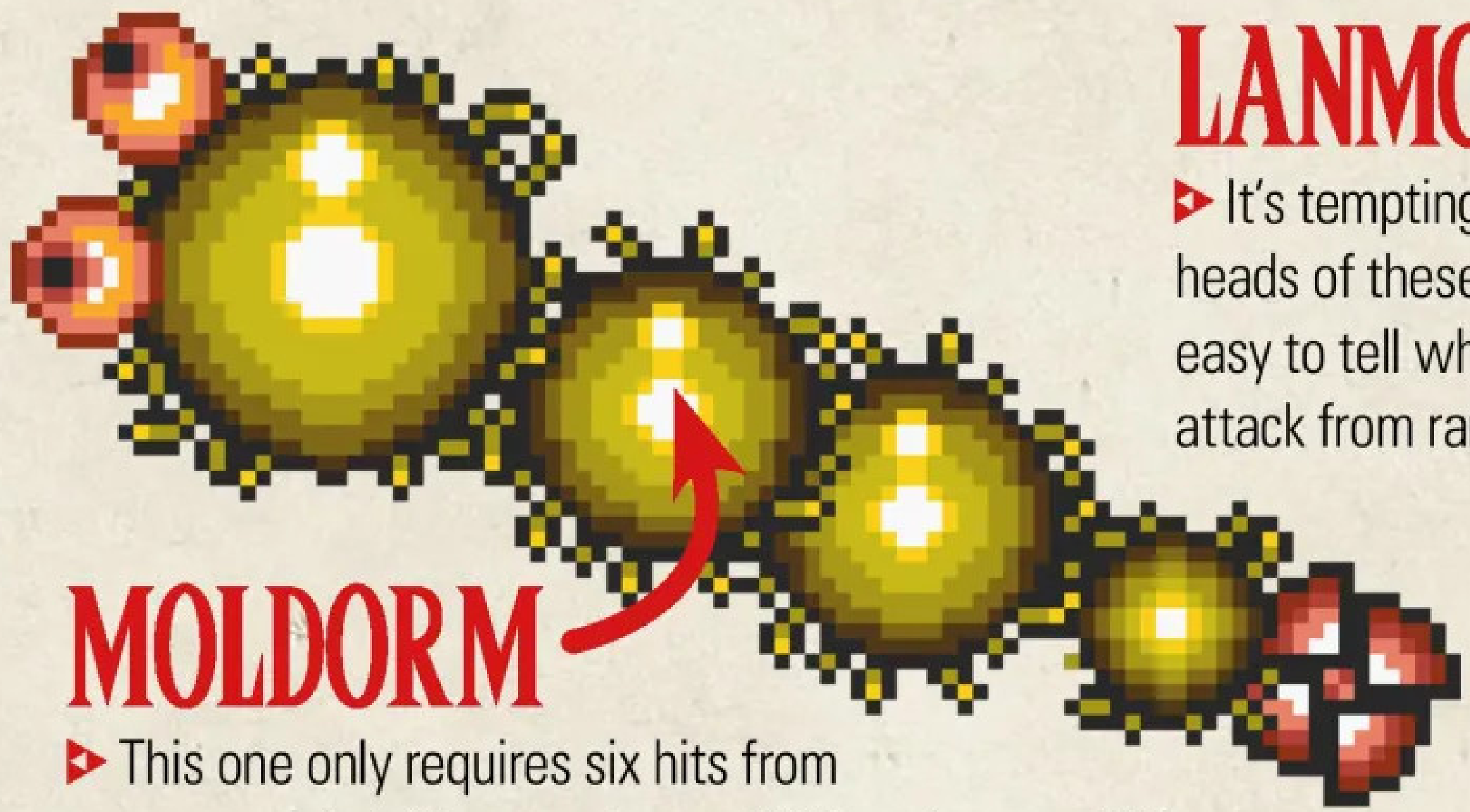
LANMOLAS

▶ It's tempting to grab your sword and aim for the heads of these burrowing creatures, but it's not easy to tell where they'll go. If you're having trouble, attack from range with arrows or the Ice Rod.



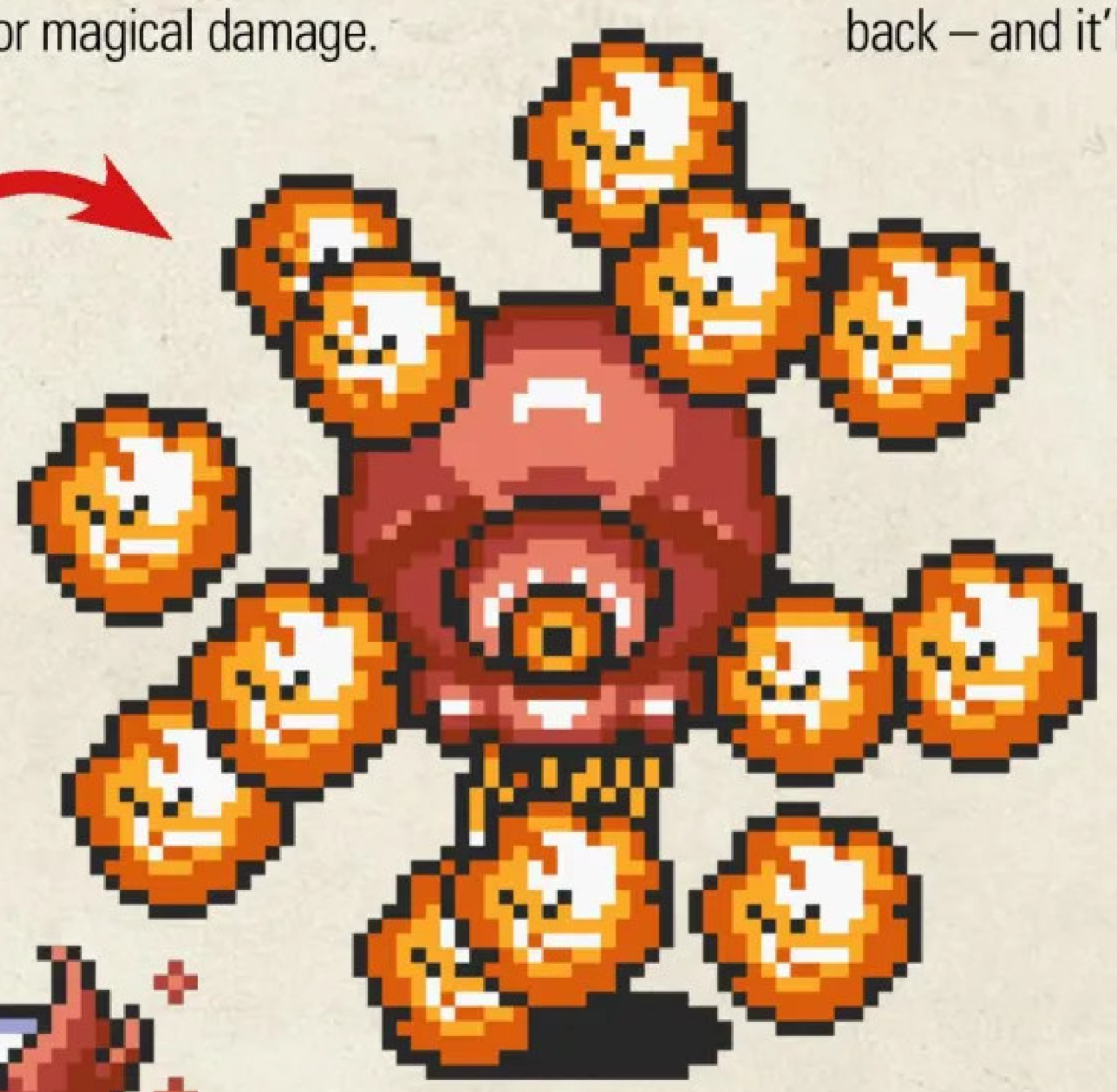
AGAHNIM

▶ Don't try to physically harm this wizard, you'll just get zapped. Instead, time the swing of your Master Sword to return his own attacks back in his direction for some major magical damage.



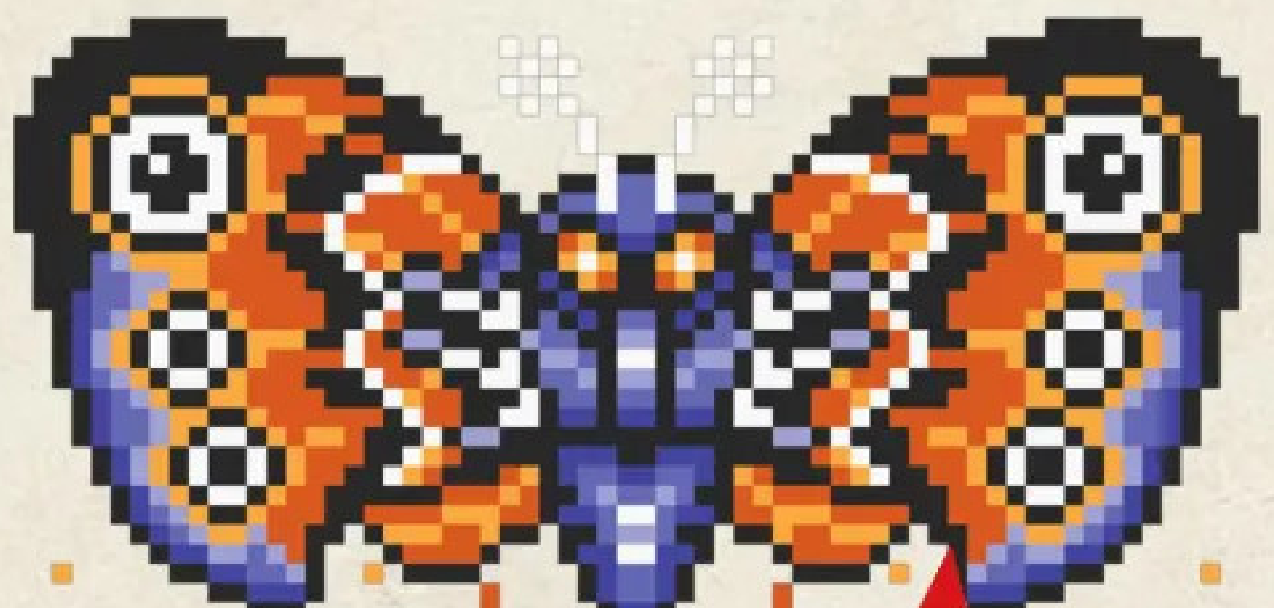
MOLDORM

▶ This one only requires six hits from your sword, but it's no pushover. If it knocks you off the platform you're fighting on, you'll have to make your way back – and it'll recover all of its health while you do.



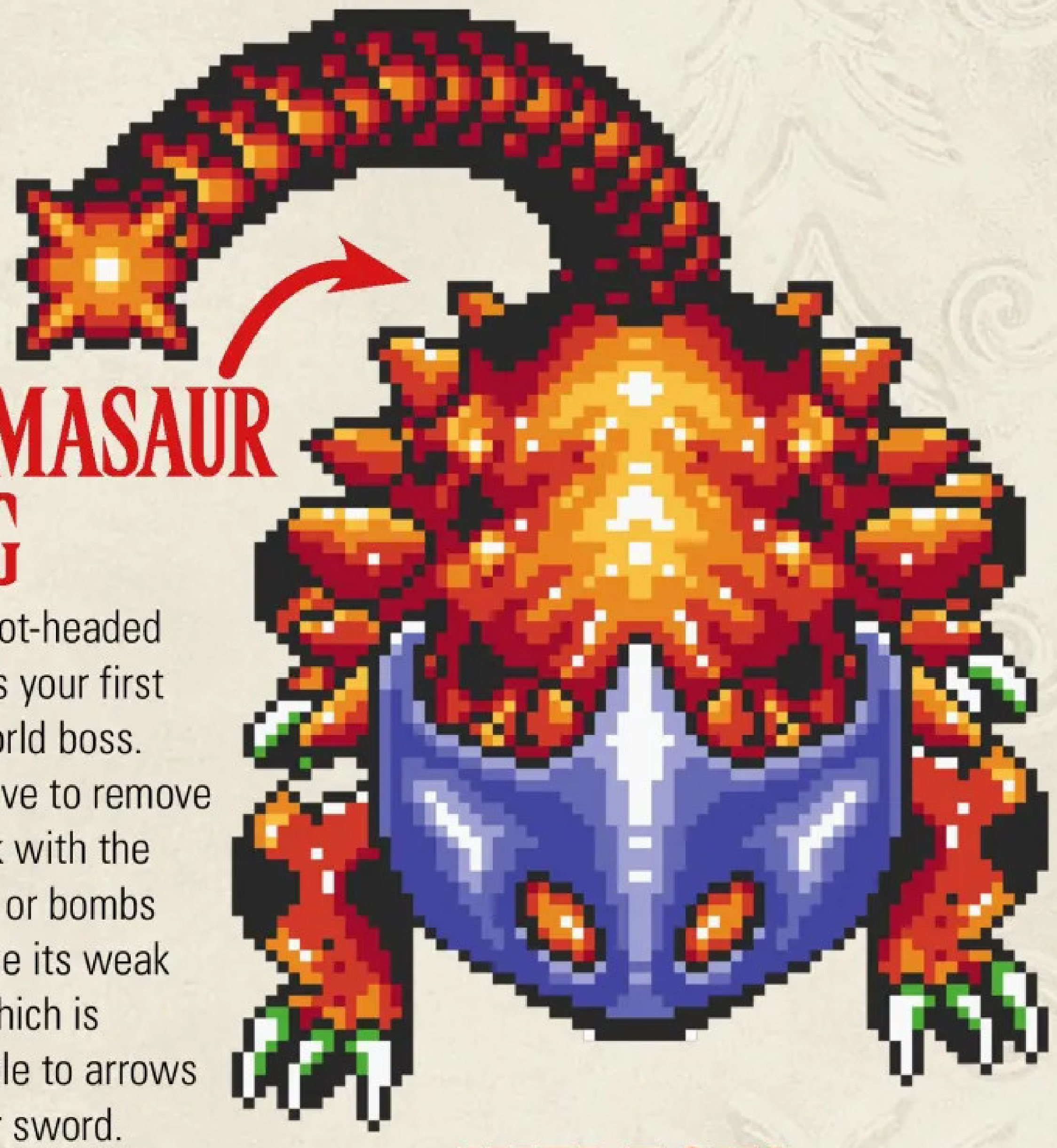
ARRGHUS

▶ Only a coward hides behind its mates like Arrghus. Separate them using the Hookshot, then clear away as it tries to land on you. Once it's on the floor, give it a seeing to with your sword.



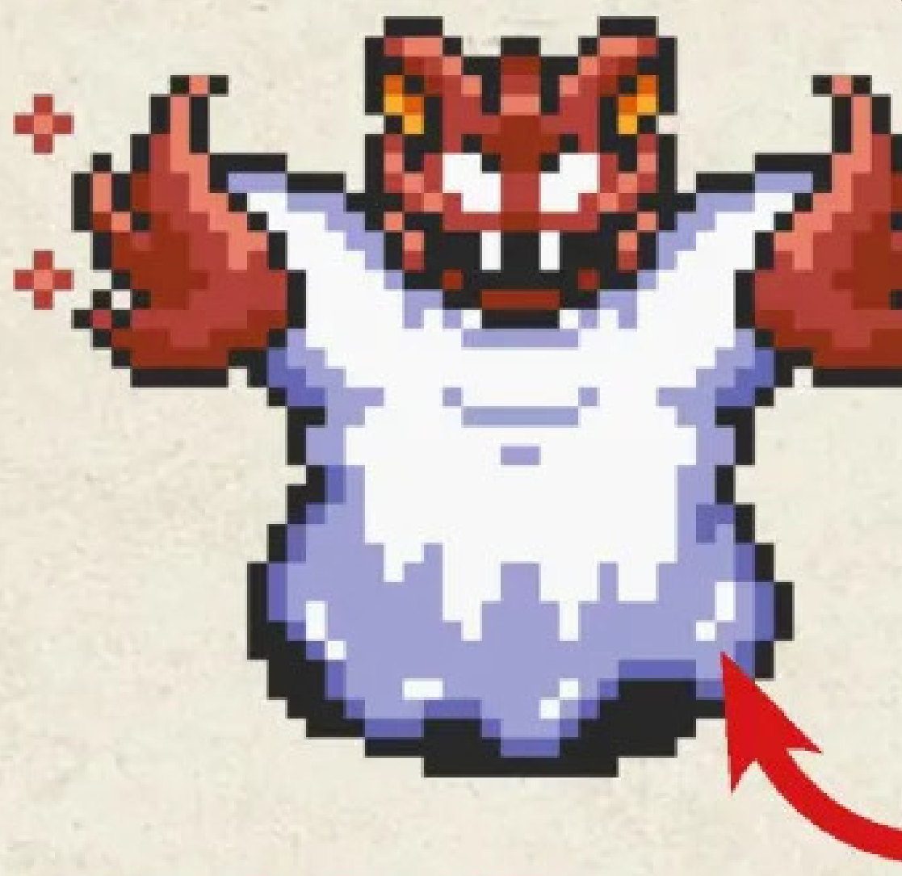
MOTHULA

▶ Mobility is the key for this boss, as Link has to contend with a moving floor full of traps while it flies around. Your sword works well here, but the Fire Rod is effective if you're struggling at close range.



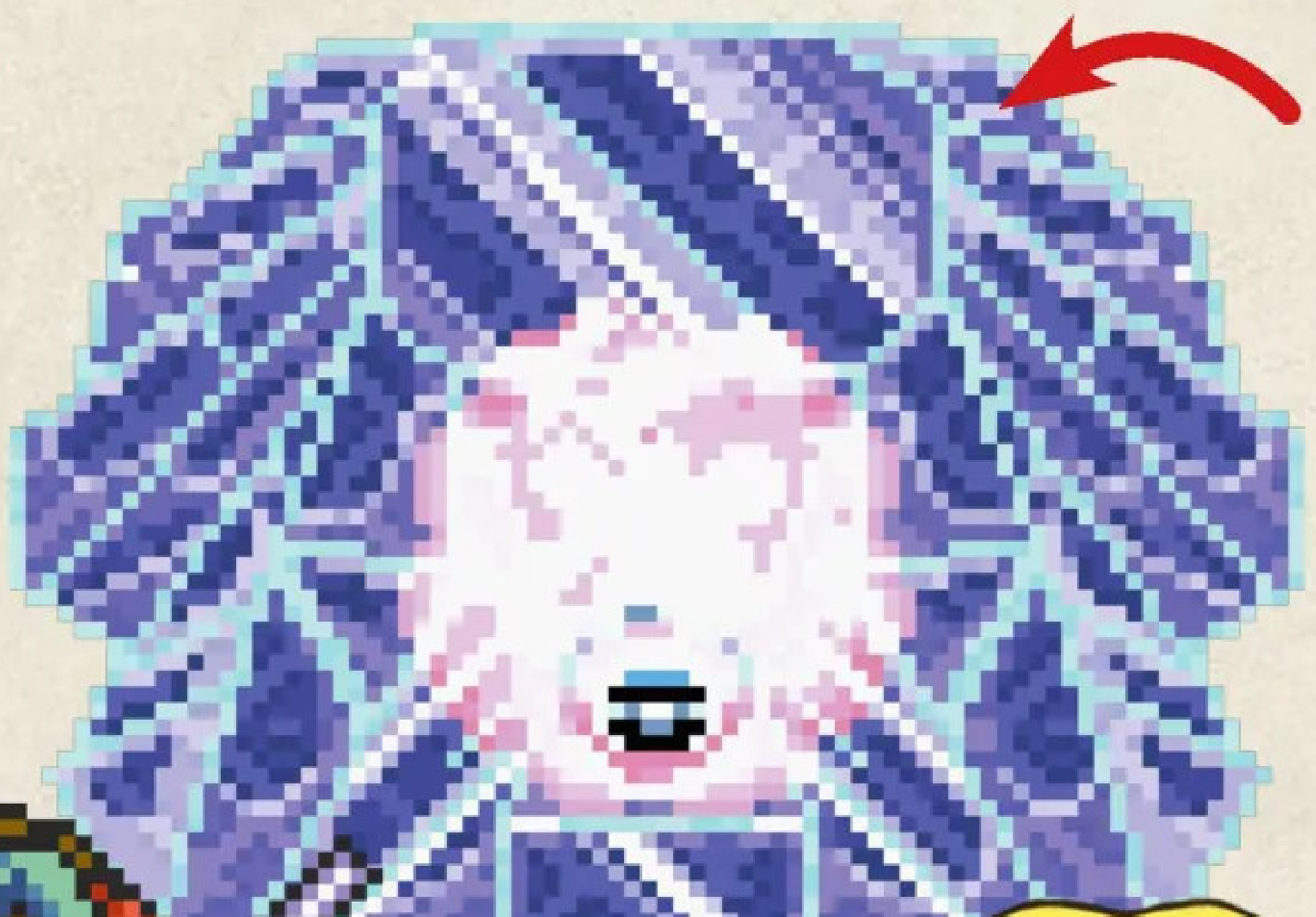
HELMASAUR KING

▶ This hot-headed baddie is your first Dark World boss. You'll have to remove his mask with the hammer or bombs to expose its weak point, which is vulnerable to arrows and your sword.



BLIND THE THIEF

▶ This guy is prone to losing his head, quite literally – once you've wrecked Blind's body, it flies around the room spitting fireballs. Subtlety isn't required here, you've just got to hack it to bits three times.

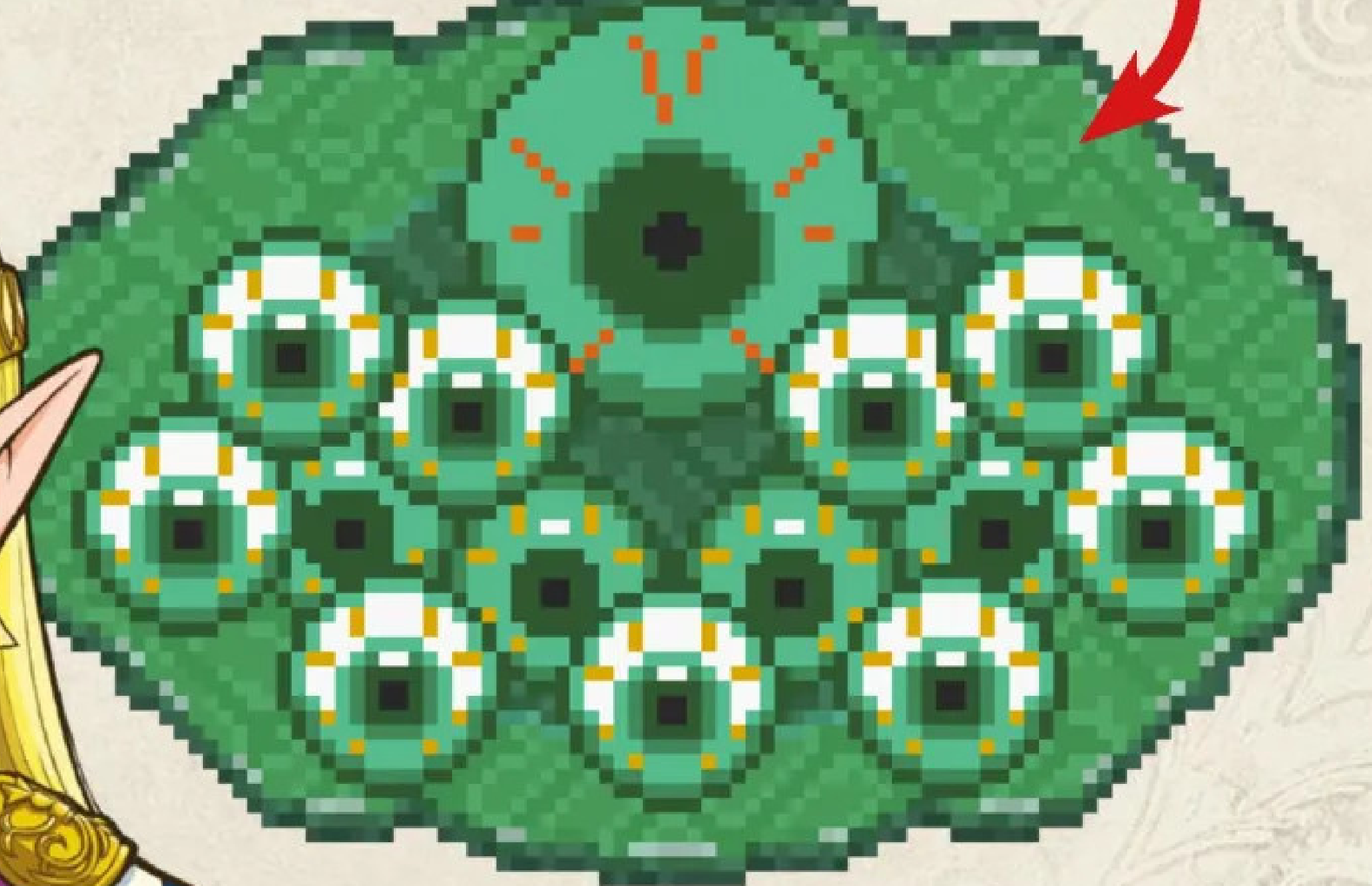


KHOLDSTARE

▶ This frosty fellow isn't friendly, so break the ice with a fire attack (we prefer the Bombos Medallion). Be careful as you try to finish it with your sword or Fire Rod, as the floor is predictably slippery.

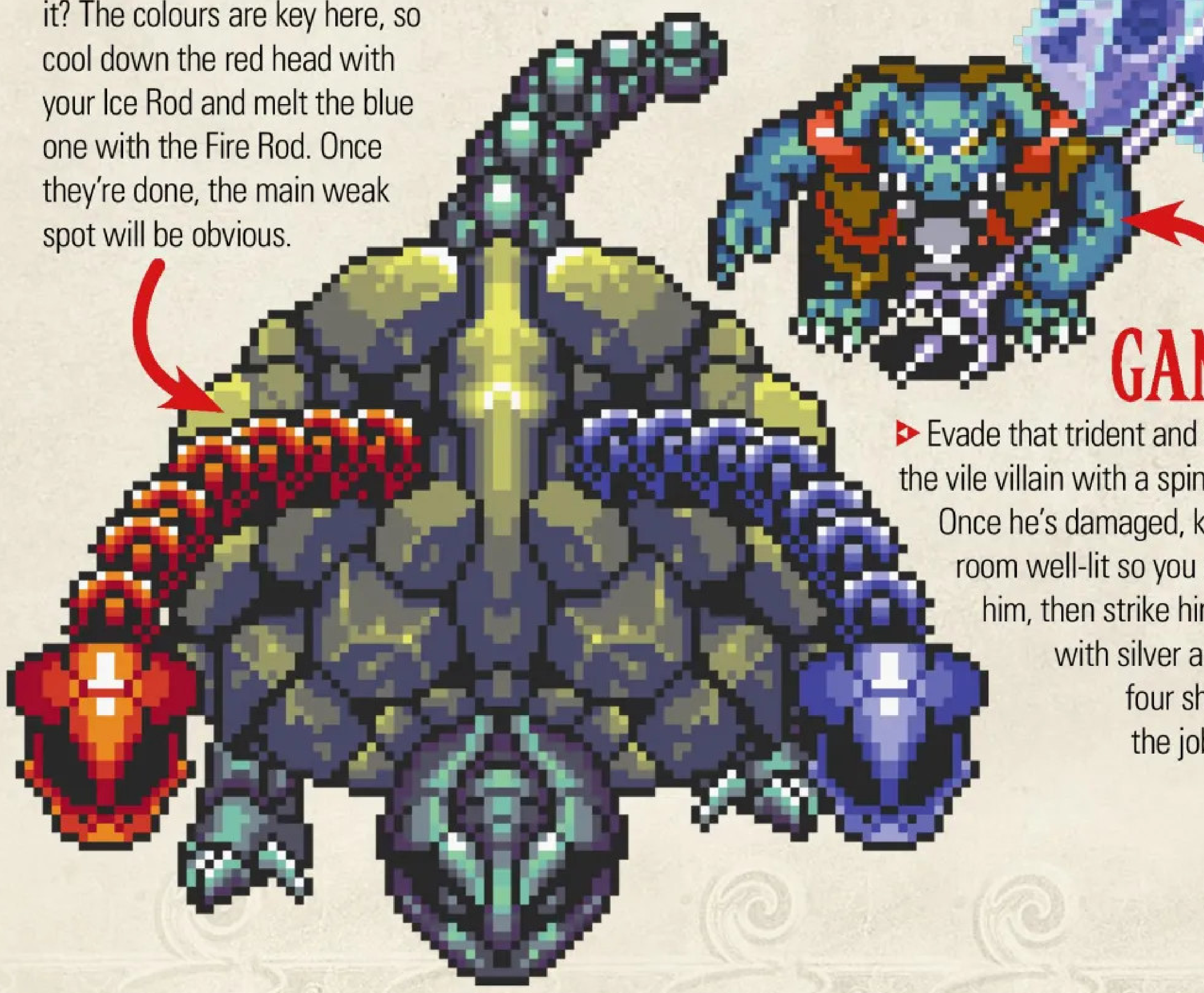
VITREOUS

▶ Don't try to get up close with this nasty piece of work, its slime is deadly. The small eyeballs will come to you, so chop them down one by one, before attacking from a safe distance with your bow.



TRINEXX

▶ Trinexx, three necks – get it? The colours are key here, so cool down the red head with your Ice Rod and melt the blue one with the Fire Rod. Once they're done, the main weak spot will be obvious.



GANON

▶ Evade that trident and then hit the vile villain with a spin attack. Once he's damaged, keep the room well-lit so you can see him, then strike him down with silver arrows – four should do the job nicely.

INSIDE THE
NINTEN

FOR A TIME IN THE LATE-NINETIES, NINTENDO BOASTED OF HAVING "THE FASTEST, MOST POWERFUL GAMES CONSOLE IN THE WORLD", AND REVOLUTIONARY 3D GAMES TO RUN ON IT. BUT WHAT MADE THIS POWERHOUSE TICK? WITH THE HELP OF VETERAN DEVELOPERS, WE DELVE INTO THE MACHINE TO FIND OUT

WORDS BY NICK THORPE

In 1993, Nintendo was a company in an interesting position. While it was undoubtedly a leader in the videogame console market, it could no longer boast the virtual monopoly it held during the late-Eighties. What's more, the industry was already planning to transition away from the 16-bit console market, and rival manufacturers were beginning to show their hands. NEC had experienced success in Japan with the PC Engine, and had already shown off the 32-bit Tetsujin, while Atari had announced the Jaguar in August 1993 and was gearing up for a holiday test launch. The much vaunted 3DO, from former Electronic Arts executive Trip Hawkins, was also scheduled to launch for the holiday season and had the backing of electronics giant Panasonic.

Nintendo wasn't particularly concerned with most of these companies – at the time, Sega was its biggest rival, having been the first company to bring serious competition to the console market. As the two biggest players in the console market, either of them could have been behind what ultimately became the Nintendo 64. The hardware was primarily engineered by Silicon Graphics, Inc, a huge name in movie special effects technology which had recently bought MIPS Technologies, the designer of the CPUs used in its workstations. Having developed a low cost, power-efficient version of the latest MIPS processors, SGI put together a design proposal for a games console. In September 1993, the rivals had signed the contracts and made their announcements – Nintendo would partner with SGI and launch its 64-bit home console in late-1995, while Sega would use Hitachi's 32-bit processors and launch in the autumn of 1994. Sony, Nintendo's former partner on the SNES CD-ROM project, announced its intention to launch a home console of its own the following month.

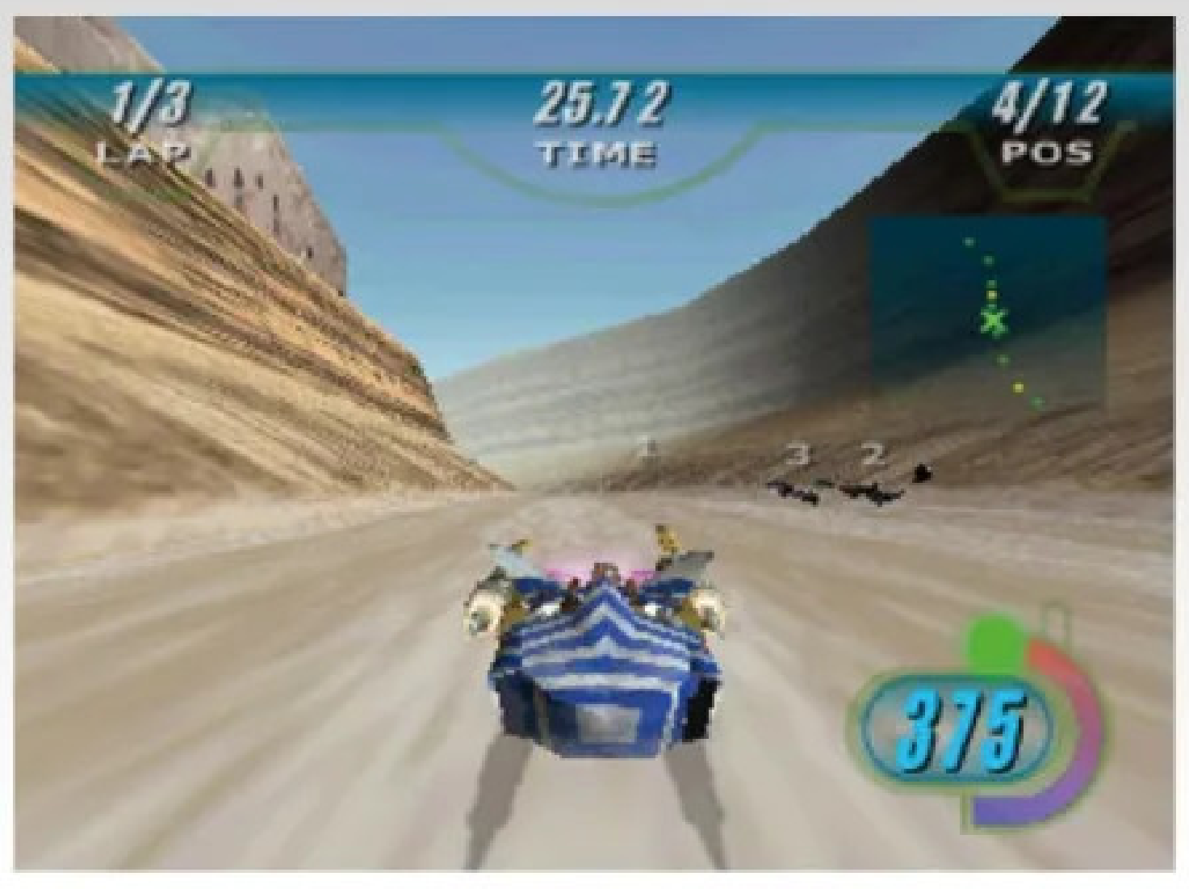
Being the last to market wasn't an unfamiliar situation for Nintendo, as it had done the same with the SNES and been able to retain a substantial market share regardless. The tactic here was the same – simply put, Nintendo bet on having the best technology. Project Reality, as it soon became known, was also an easy machine to hype. With SGI on board, *Nintendo Magazine System* claimed that the machine had "the potential to provide graphic images such as those seen in *Abyss*, *Jurassic Park* and *Terminator 2*". At a time when more bits was better, being a 64-bit machine was a big deal. *Total* emphasised that "[Sega's] next generation machine, Saturn, is a 32-bit console – fairly powerful, but nowhere near as fast as the Silicon Graphics hardware". By the time the console had received its Ultra 64 name in 1994, Nintendo had decided on an extensive advance marketing strategy, working with Midway to create Ultra 64 branded arcade games and taking out advertising to encourage players to wait for the console. They needed plenty of patience, as the Nintendo 64 was delayed repeatedly prior to its Japanese release in June 1996. "It's hard to do hardware full stop, and this was a totally new platform – new chipset, new CPU, new GPU. On top of that, we were trying to make a flagship *Mario* game," says Giles Goddard, a programmer working for Nintendo at that time. "They just wanted to get it right – there was no particular big problem that happened that caused a delay or anything."

While working on the planned launch game *Star Wars: Shadows Of The Empire*, Eric Johnston had a privileged ▶

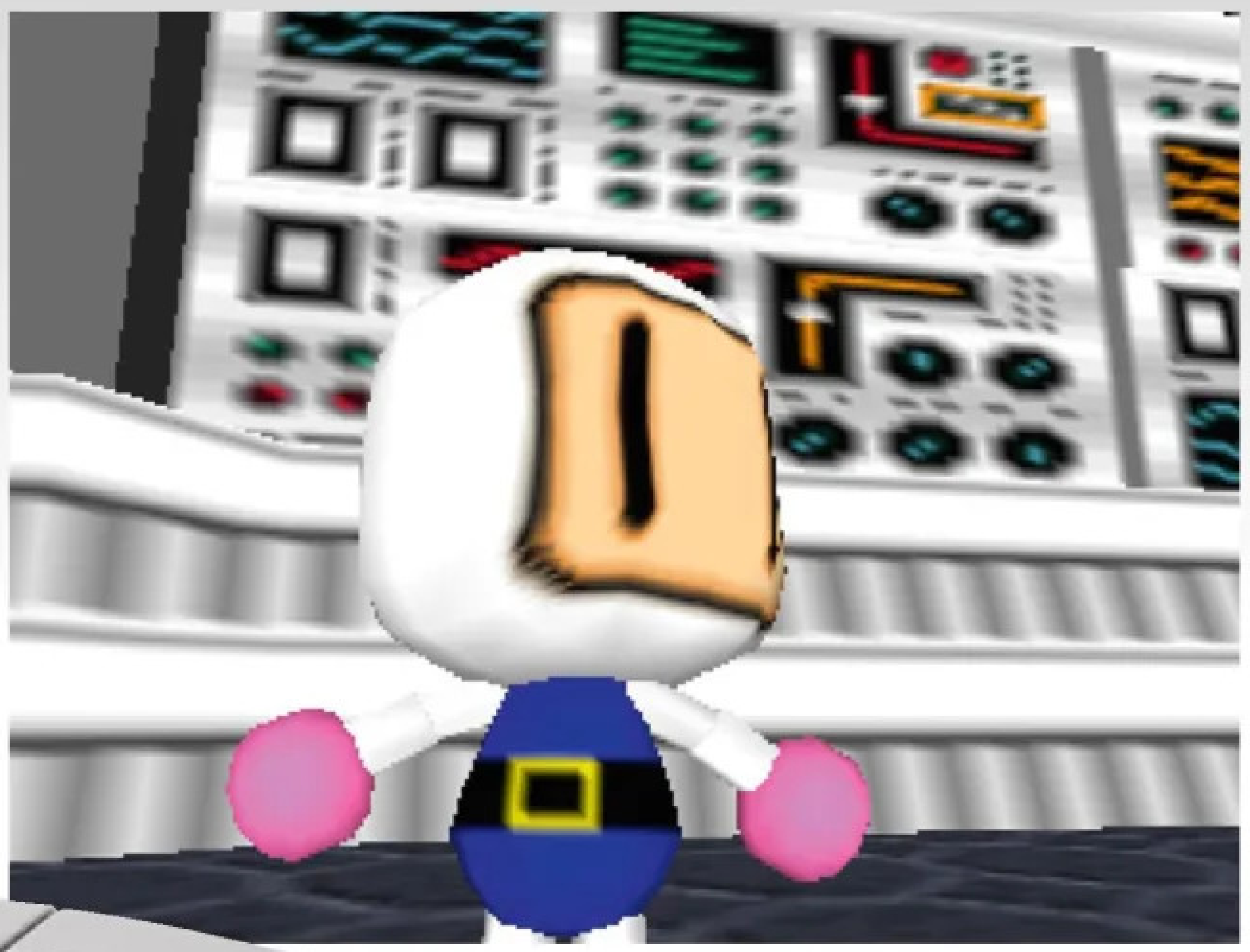
TIME 1'29"69
DAMAGE

» [N64] Giles Goddard was able to create an animation system for *1080° Snowboarding* that moved between motions smoothly.

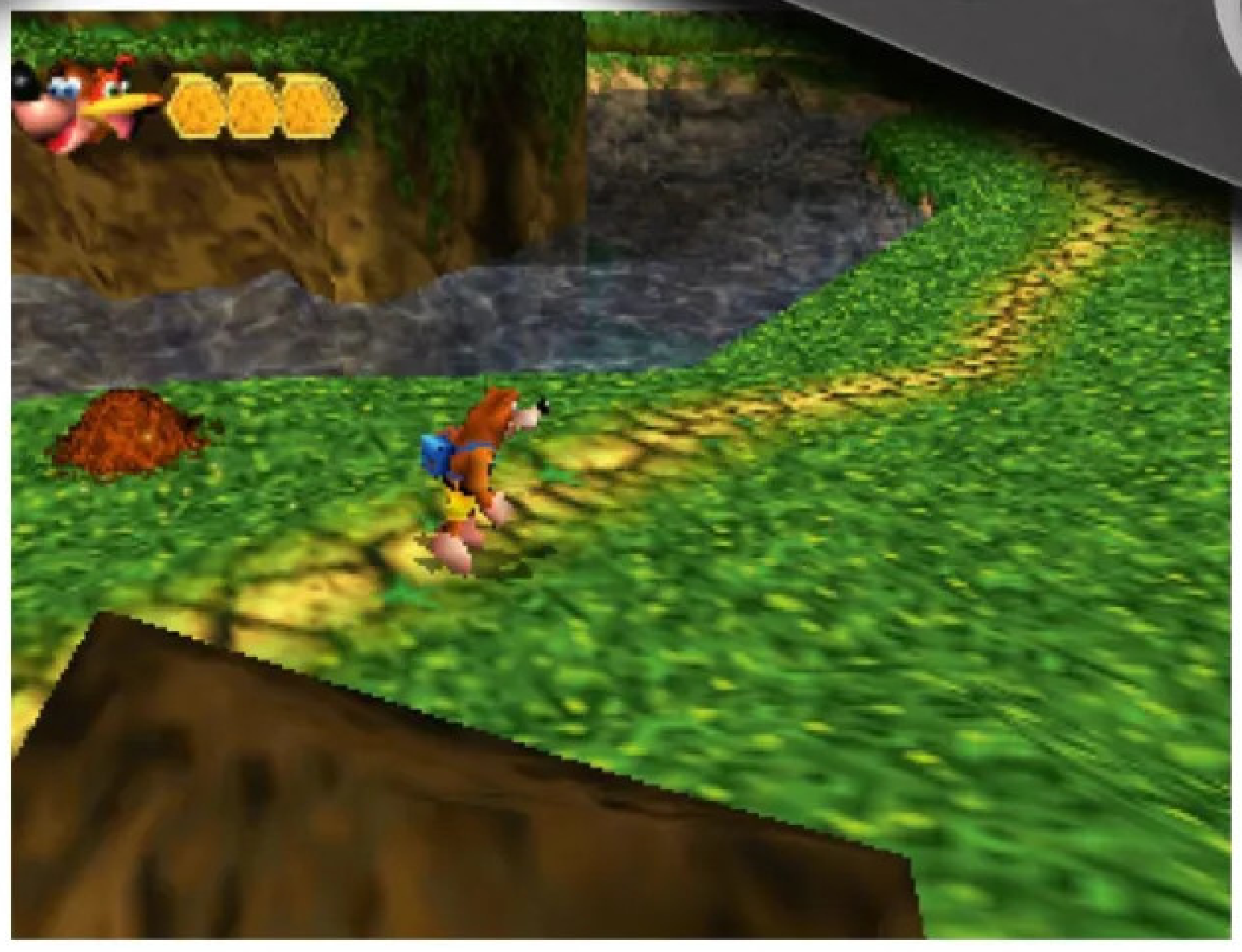
DO64®



» [N64] We can only imagine how *Star Wars Episode I: Racer* would have run with the 2MB RAM originally proposed.



» [N64] If used over too large an area, bilinear interpolation can make textures look blurry and indistinct.



» [N64] Games like *Banjo-Kazooie* featured large 3D worlds that other consoles struggled to replicate.

Inside The

INTERVIEWEES

JES BICKHAM
Reviews editor – *N64 Magazine*

ED BRYAN
Artist – *Banjo-Kazooie, Banjo-Tooie*

MATT FURNISS
Musician – *Cruis'n Exotica, Excitebike 64*

CHRIS SUTHERLAND
Programmer – *Banjo-Kazooie, Banjo-Tooie*

STEVE MAYLES
Artist – *Banjo-Kazooie, Banjo-Tooie*

LEE SCHUNEMAN
Director – *Diddy Kong Racing, Dinosaur Planet*

ERIC JOHNSTON
Technical/project leader – *Star Wars: Shadows Of The Empire, Star Wars Episode I: Racer*

MARK STEVENSON
Artist – *Donkey Kong 64*

AMIR LATIF
Programmer – *Wetrix, Mario Artist: Paint Studio*

GILES GODDARD
Programmer – *Super Mario 64, 1080° Snowboarding*

1 ST
LAP 3/3
×5
TIME 01:41:69

[N64] Lee Schuneman and the *Diddy Kong Racing* team had ideas first and worried about hardware limitations later.

position in seeing the system take shape. "I loved the N64 hardware. Mark Blattel and I had a desk at SGI during its development, running it through its paces as it progressed. At the time, the only machine we could simulate it on was a $250,000 SGI Onyx, which was a purple and black box the size of a small desk, which required its own 16-amp power outlet," he tells us. Giles also remembers this setup. "There were changes all the time basically, we rarely saw actual hardware. There were two levels of emulation – the API side emulation where you could recompile your game to run on SGI hardware natively, with very little changes to your code you could run either the native one or build it for the emulator. Most of the time we were developing on the native version of the game, and then occasionally we'd recompile it for the Onyx to see if it still worked in the same way. We rarely saw actual N64 devices."

The CPU was quite powerful for its day, with a high clock speed of 93.75MHz for a performance of 125 million instructions per second – for comparison, the PlayStation does around 30 MIPS. But did the ability to use 64-bit processing actually provide any practical advantages? "Almost none, I would say," says Giles. "I'd say it was more of a marketing thing than anything actually usable. A float is 32 bits and a double float is 64 bits, and you don't need double floats to do any kind of 3D maths usually, especially back then. All games ran in 32-bit mode. 32 bits is what, 4GB of memory? This thing only had 4MB," he explains. "From memory, I think the 64 bits was more marketing spiel than anything else," concurs Amir Latif. "It certainly didn't have a huge amount of RAM to access and the memory bus certainly wasn't that wide. There was a 32-bit mode and a 64-bit mode, but in reality we never really touched the 64-bit mode as there were other knock-on effects (for example, pointers become eight bytes instead of four)."

"There were lots of new things that were being thrown at us that we had to familiarise ourselves with," says Chris Sutherland. "We were previously used to coding things in assembly language, so depending on the processor we were using, whether it was for the Game Boy, the NES or the SNES we'd be familiarising ourselves with that processor. So I suppose it was a bit of a leap in terms of moving from assembly language to C, where we were programming on a higher level language. There were lots of things to consider there, and lots of new things to learn," he explains. "There was a move to three dimensions as well, which is something that we weren't familiar with, learning things with cameras and things like that. We were also using different machines, so previously we would be using PCs to develop with, and now we were using these Silicon Graphics Indys which didn't run Windows, but they ran a version of a Unix-style operating system."

One unique thing about the N64 was the Reality Co-Processor, or the RCP. Although this chip handled the console's graphical functions, that wasn't its only task – it was also used for audio and input/output operations. The RCP could be reconfigured towards different performance profiles using custom microcode, and it had plenty of hardware features that were key to the N64's distinct look. "In particular, I liked having built-in Z-buffer, trilinear mipmapping and floating point. Today, few 3D game developers would even *consider* going without these, but at the time they were new, and didn't exist on other platforms at all, even expensive home PCs," says Eric. "If you run N64 games side by side with other

FRANCHISE FORWARD

×91
POWER ×24
×120

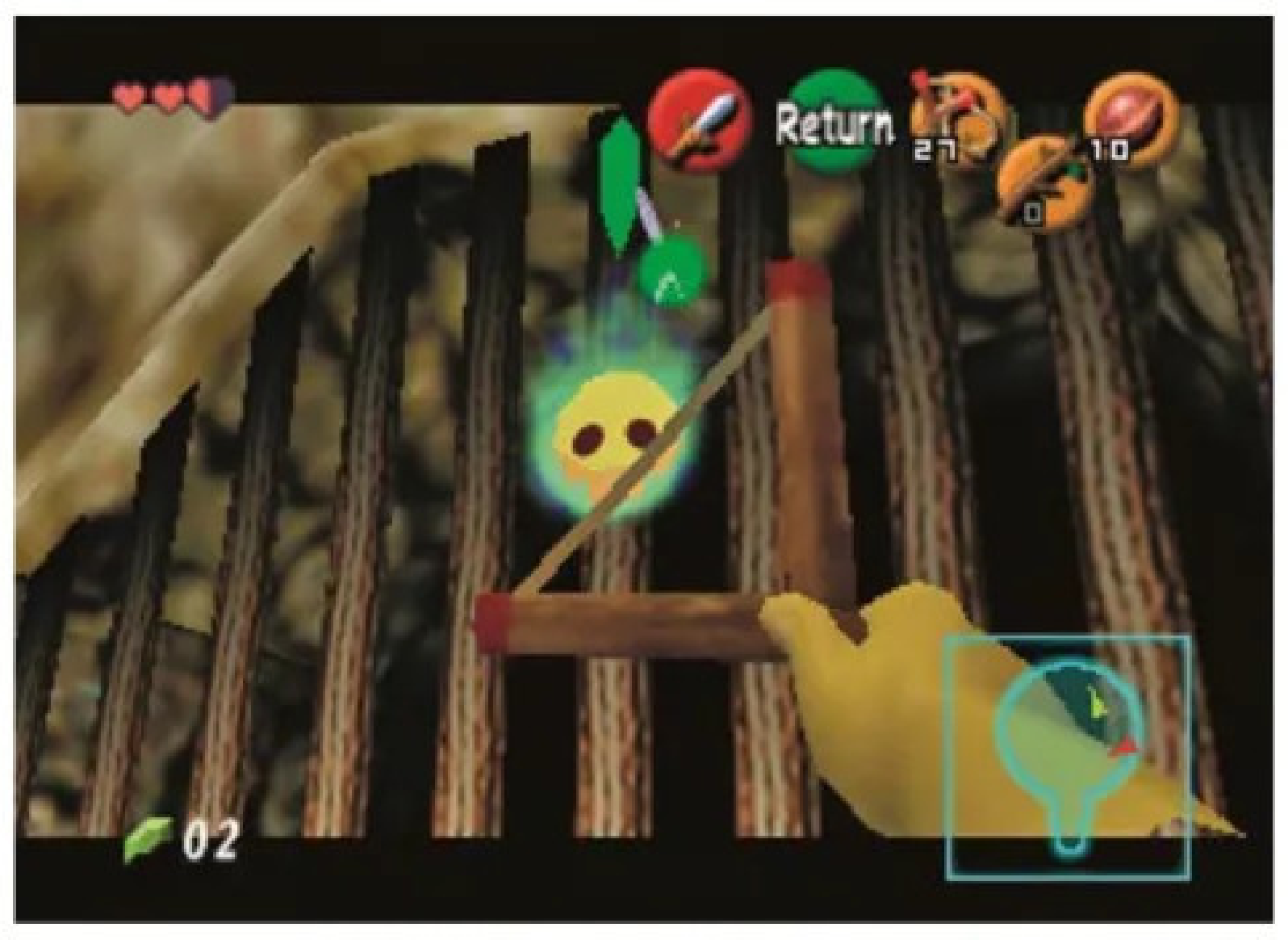
SUPER MARIO 64

Nintendo did away with the largely linear obstacle courses of past games and came up with an incredible new template for Mario, creating 3D spaces that each felt like self-contained playgrounds. Each stage featured multiple goals due to the various Power Stars on offer, maximising the need to explore all of them thoroughly.

LAP 2/3
TIME 01'53"84
6th

MARIO KART 64

Freed from the flat tracks necessitated by the Mode 7 feature of the SNES, Nintendo was able to introduce courses with bumps and jumps, as well as more creative hazards including boulders tumbling down cliffs. Even Battle Mode benefitted, with Green Shells being far more lethal at the lower levels of Block Fortress than the top.



ZELDA: OCARINA OF TIME

Combat in 2D *Zelda* games had to compensate for the player's four directions of movement, but 3D had to replace the reliable top-down viewpoint. The genius Z-targeting system allowed players to lock the camera to a single enemy and move relative to it, while you could see through Link's eyes to aim both the slingshot and the bow.

STAR FOX 64

Star Fox 64 offered few gigantic gameplay innovations, due to the fact that its predecessor was one of the rare 3D games for the SNES. What it did have was a massive increase in graphical detail, environmental complexity and framerate, as well as a good use for the controller expansion port with the introduction of the Rumble Pak.

contemporary platforms, you definitely notice the difference visually." Amir also remembers this visual difference. "In terms of pixel fidelity, the N64 had fairly cutting-edge features, especially compared to its PlayStation peer. Z-buffering, anti-aliasing, bilinear interpolation texturing, perspective corrected texturing, mipmap texturing, environment mapping, fog, all of these features were missing from its competitors. Unfortunately, they also came at a heavy price and the N64 really struggled to throw around too many triangles, especially with some of those heavier effects turned on."

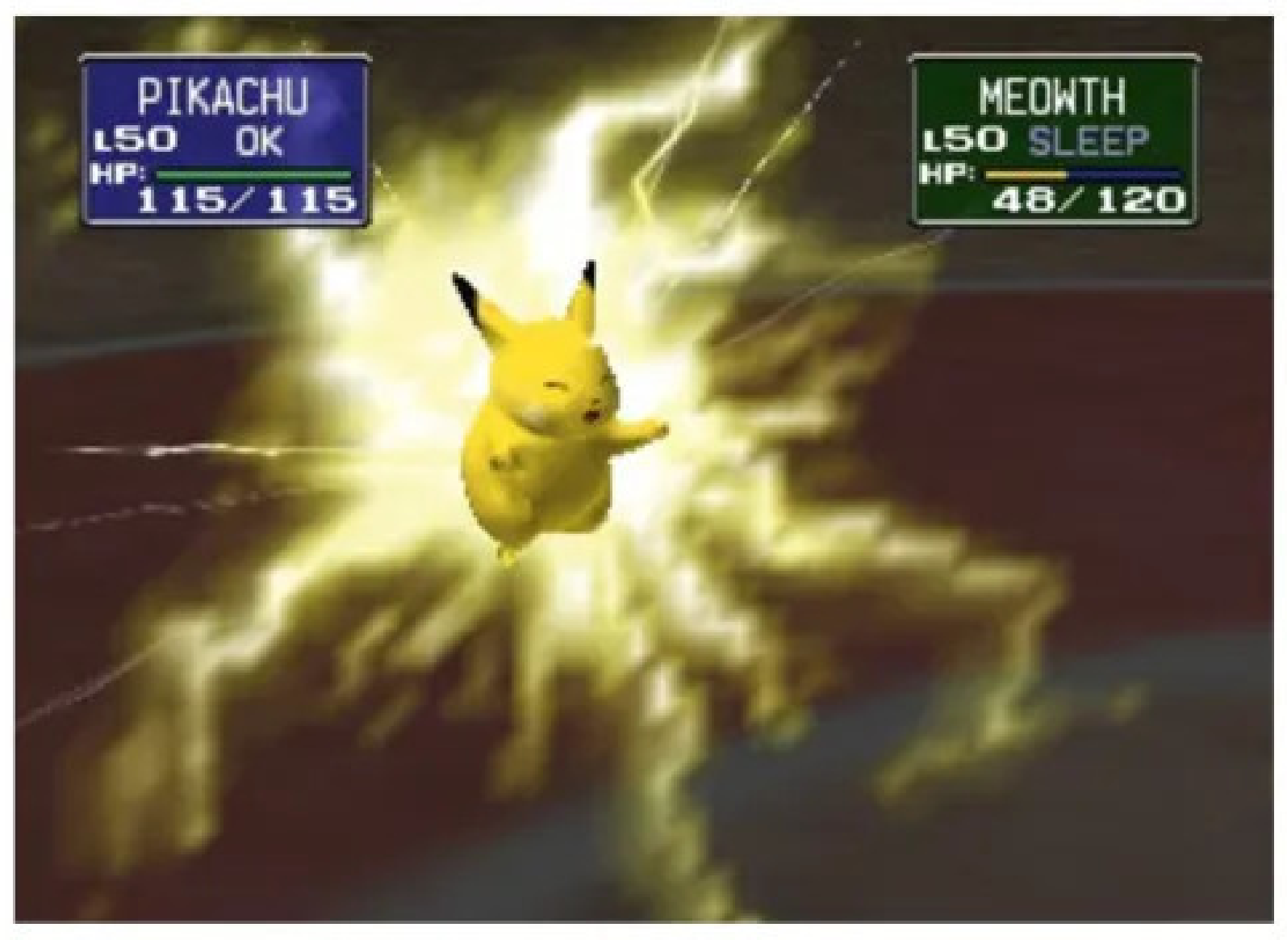
Rare struggled with the performance balance in its early work with the machine. "There were all kinds of convoluted systems that we had to try and not use that Z-buffer, so it was sorting by object and all this kind of stuff, which always works to 80% but then there's the 20% where things draw in the wrong order. There were all kinds of things we tried to mitigate that, but in the end we settled on 'let's use the Z-buffer,'" Ed Bryan recalls. "The Z-buffer was seen as extremely expensive in terms of framerate, but you couldn't do without it as we found out," adds Steve Mayles. "But this wasn't on *Banjo*, this was when we were doing the *Dream* game," he says, referring to the precursor to *Banjo-Kazooie*. "You'd be walking across a bridge and it would all look great, then you'd move the camera slightly and then this massive thing would pop in front of everyone."

Despite being industry leaders in 3D art thanks to games like *Donkey Kong Country* and *Killer Instinct*, Rare's artists also found that they needed to learn a new way of working for the new console. "With NURBS, the way we did the 3D for *Donkey Kong Country*, it was completely different to polygons so it was really another world of 3D with the triangles and the vertices," says Steve. "There were more rules to follow really, because it was real-time. With the NURBS, you were making it and rendering it out, and at that point it didn't really matter what it looked like in the package, but with the polygons everything had to be done exactly right, or else it'd go into the game and it'd all go wrong." However, the NURBS experience didn't go to waste, as it was used to create textures – though they were their own challenge. "Colouring everything a vertex at a time, texturing everything a triangle at a time – it was a very different world to what it is now," says Ed. "We opted for as few textures on the characters as possible," he remembers. "Which actually works well in retrospect, because if you have that shading, then if you have a modern version which upscales it, it looks kind of neat still, whereas if you have a texture it just gets really blurred out," Chris adds.

The system's approach to memory followed a similarly flexible model to the co-processor. Previous consoles had allocated various pools of RAM to different tasks – main memory, video and audio. The N64 used a unified memory architecture, allowing developers to distribute the system's 4MB memory between tasks as they saw fit. "Up until that point everybody had to deal with banks and DMA memory between banks, and that was a real pain to do that kind of stuff. Now we had basically everything under one roof, which was just fantastic," says Giles. "You basically had three areas. You had the ROM, you had the RAM, and then you had the graphics memory – and when I say memory I mean texture memory and vertex memory. So you still had a graphics part of the memory that was separate – it was on-chip cache, but it was great to have everything in RAM – you could access anything, anywhere, without having to worry about what area it was. That was one of the big attractions

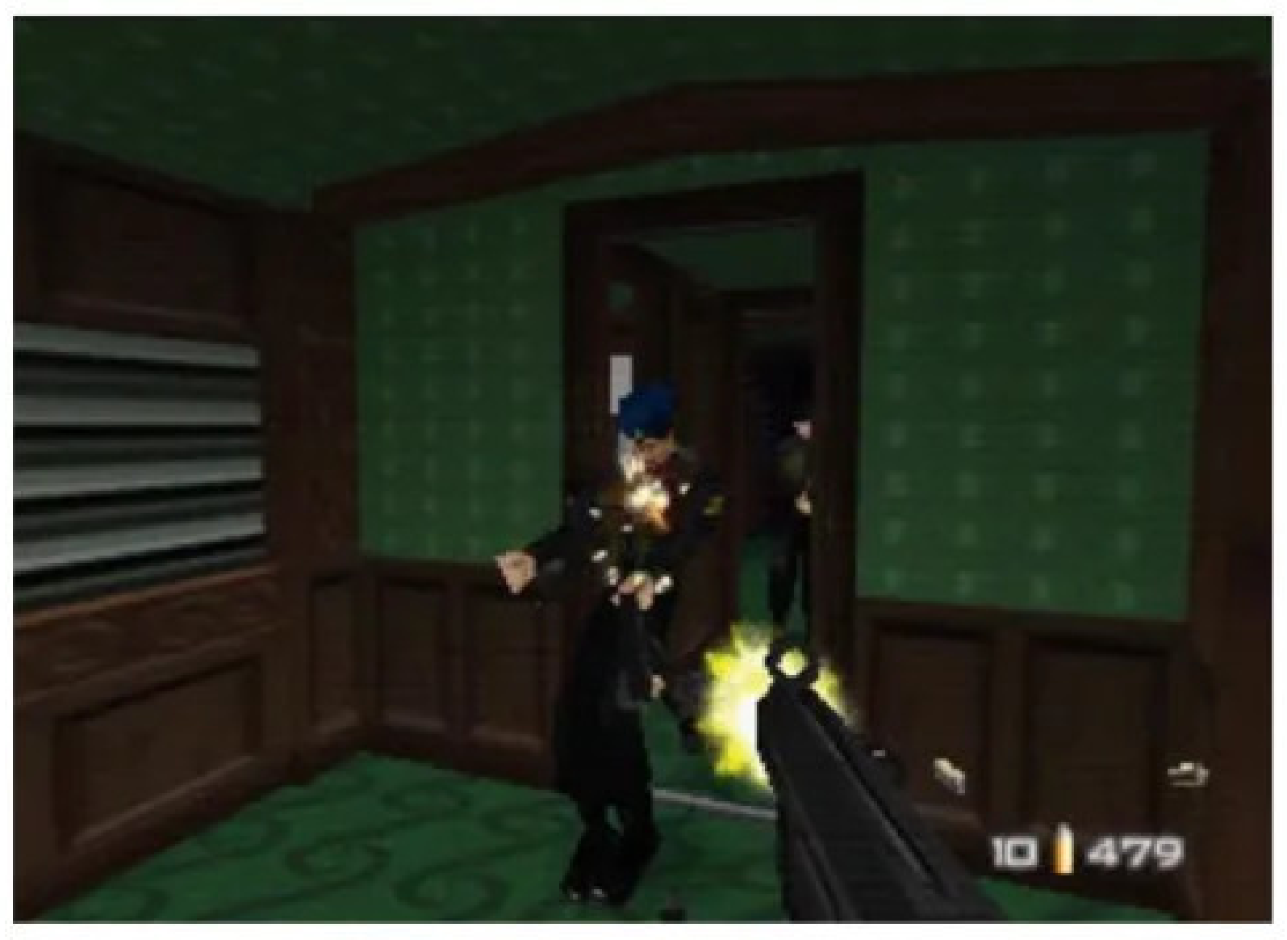
▶

HOW EXISTING GAMING SERIES ADJUSTED TO THE NEW POSSIBILITIES OF THE N64



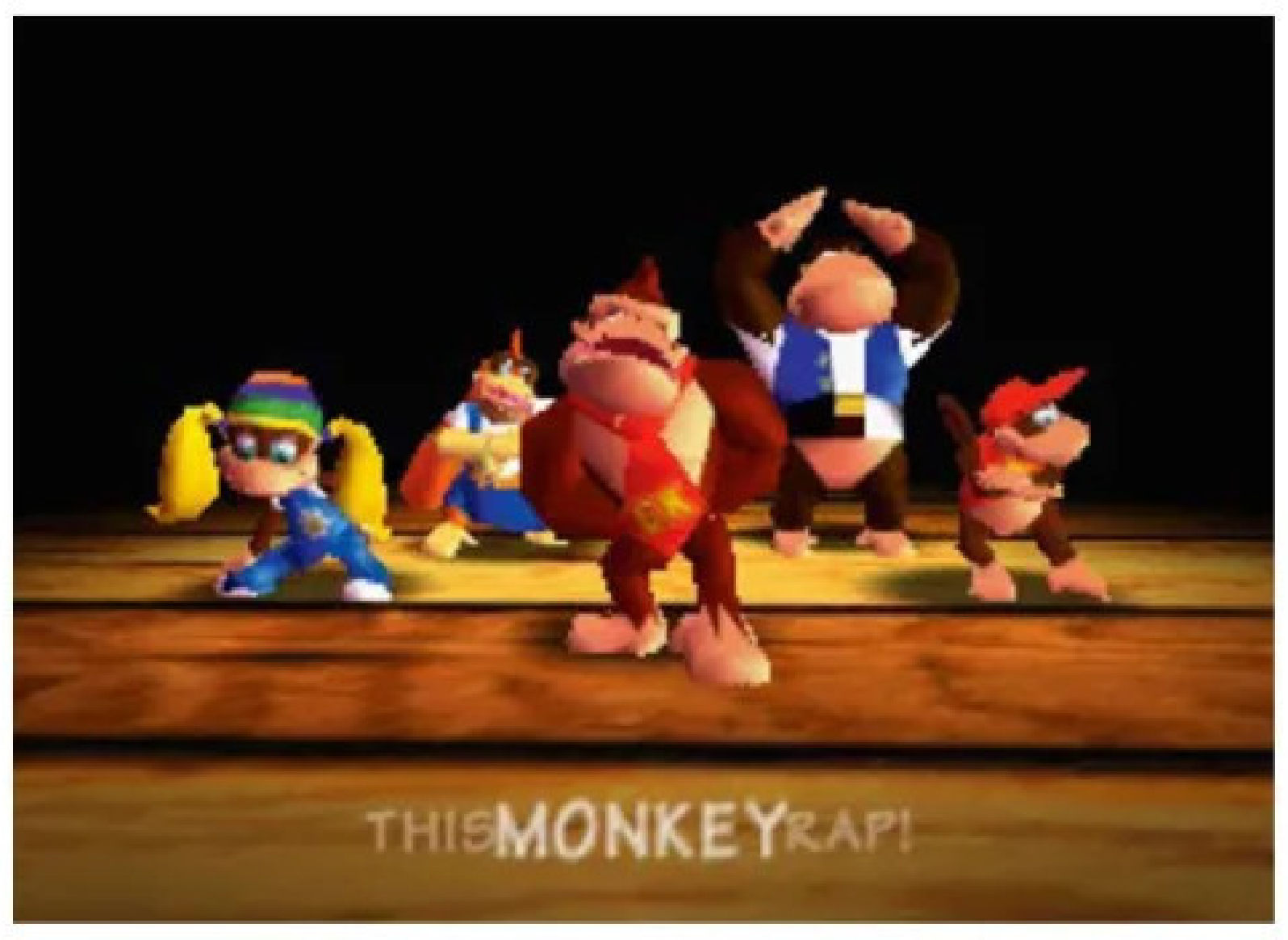
POKÉMON STADIUM

■ As great as the handheld *Pokémon* games were, the battles didn't look hugely impressive to kids that had been hooked on the anime series. *Pokémon Stadium*'s 3D renditions of the popular critters were imported from your Game Boy cart and had all the charm of their cartoon counterparts, plus some dramatic attack animations to match.



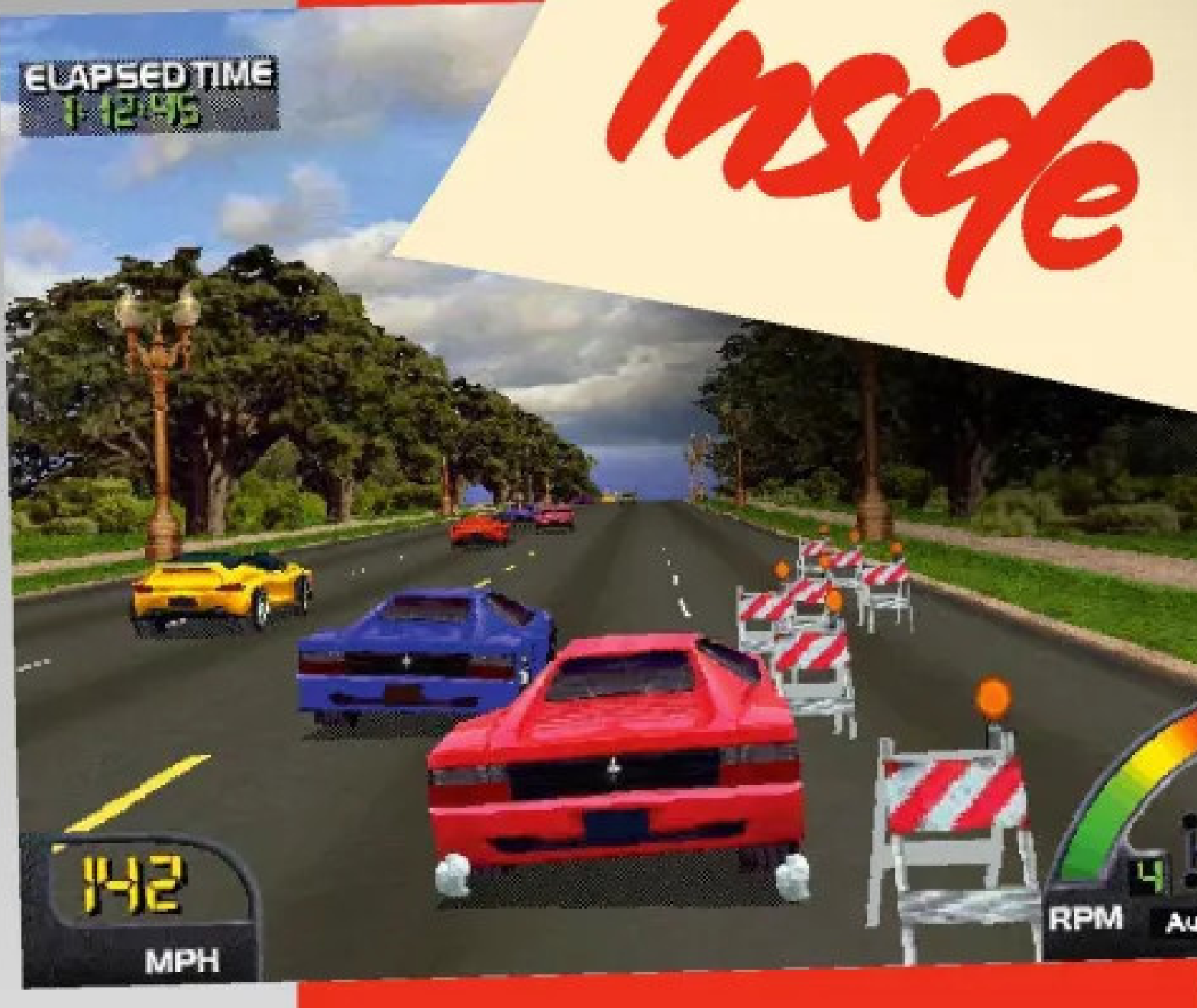
GOLDENEYE 007

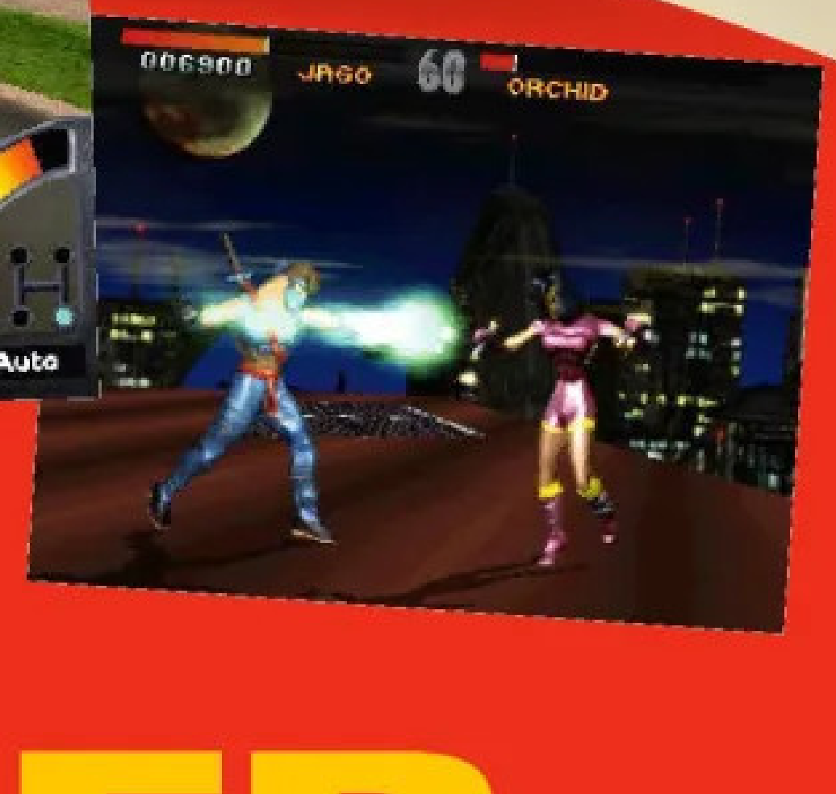
■ Prior *Bond* games had hardly been classics, so Rare's shooter was a revelation. The first-person 3D action allowed players to mentally slip into the super spy's tuxedo, while the four control ports allowed you and your friends to see who'd win between Jaws, Oddjob, Baron Samedi and May Day. Spoiler: it's Oddjob, 90% of the time.



DONKEY KONG 64

■ Although they were finally gifted with a 3D world to go with their 3D appearance, the Kong clan's most noticeable upgrade of the N64 era arguably came in the audio department. There's no way the *DK Rap* would sound the same coming out of a SNES, and it's definitely something you'll never be able to forget once you've heard it.





THE OTHER N64S

WHAT'S THE TRUTH BEHIND THE ARCADE ULTRA 64 GAMES?

If you were a regular arcade visitor in the mid-Nineties, it's very likely that your first glimpse of the eagerly anticipated Ultra 64 took place there. Rare's *Killer Instinct* and Midway's *Cruis'n USA* were both released in 1994, and each game proudly trumpeted the fact that it ran on the technology that would power Nintendo's new console. Just a few years earlier, the Neo Geo had been arcade perfect but prohibitively expensive – could it really be true that this cutting-edge arcade hardware would be coming home at an affordable price?

To put it bluntly, no. Despite sporting some prominent Ultra 64 branding in its attract mode as well as Nintendo logos elsewhere, the Midway V-Unit hardware that ran *Cruis'n USA* employed a Texas Instruments CPU and a custom 3D chip, and essentially bears no resemblance to the console that SGI would produce for Nintendo. This was actually public knowledge soon after the game was launched, too – *GamePro*'s December 1994 issue reported "according to NOA, *Cruis'n USA* was actually programmed by Williams Entertainment before Ultra 64 development tools were available". While the eventual N64 conversion does look fairly similar in many ways, it suffers from a lower resolution and less stable framerate.

That same issue of *GamePro* noted that the only developer in the world with Ultra 64 development tools was Rare. *Killer Instinct*'s attract mode claimed that it would be "available for your home in 1995, only on Nintendo Ultra 64", but this also proved to be somewhat wide of the mark. In this case though, there was a little more truth to the claims. *Killer Instinct*'s arcade board did employ a MIPS R4600 CPU, a relative of the R4300i used in the N64. However, it didn't have anything like the N64's RCP co-processor, and it used a hard disk – something the home machine never had access to. The game was converted to the SNES and Game Boy due to the late arrival of the N64, and *Killer Instinct 2* arrived in the arcades before *Killer Instinct Gold* finally arrived on the N64 in 1997.

▶ for that kind of architecture." Although the N64's memory architecture was not especially fast, Giles doesn't recall this being an issue. "It was more the size of the caches that was the problem, they were quite small. It was 4K for the textures and I think something really stupid like 16 vertices. That's where triangle stripping and all these sort of clever ways of getting the most amount of triangles out of fewer vertices was really important."

Another unusual aspect of the RAM was the ninth bit reserved for graphical functions – something Eric was keen to exploit in other ways. "You might know that the original in-development architecture was only 2 or 2.5MB RAM, all 9-bit DRAM. The CPU only had access to it as eight bits per byte, so I wrote a sketchy driver to (at some hiccup cost) use the ninth bit as extra memory. I mean hey, that's an extra 280K or so, minus what the frame buffers need – enough for some cached textures or sounds," he explains. "I proudly showed it off to Acorn, a super-cool ace developer at Nintendo. Some time later, after they'd upped the memory to 4MB I got an email saying you're welcome and *pleeease* don't use the ninth bit hack job in a shipping game." Though Eric's hack never saw the light of day, it was possibly for the best. "The RCP made really nice use of the ninth bit though, for extra Z-buffer resolution and 5553 RGB+ coverage for their clever and imperfect anti-aliasing, in a world where supersampling wasn't an option," he tells us.

When it came to sound, the N64 used the CPU and RCP to play back sound samples. While it offered a major jump over what was possible on the SNES, it had some major disadvantages compared to its competitors. "N64 has more RAM available for the audio processor, and it can load data much faster from ROM than a PlayStation can from CD," explains veteran videogame musician Matt Furniss. "Most PlayStation games had CD soundtracks leaving all the available audio RAM for sound effects, whereas N64 had to generate both music *and* sound effects. So in the end PlayStation sounds better – more sound effects, higher sample rates. But N64 music could be more dynamic and seamlessly change during gameplay." The flexibility of the system allowed for a variety of approaches. "*Cruis'n Exotica* uses very large single-channel samples, compressed down from the original arcade game. For *Excitebike 64* we used dual-channel audio stems which would allow a little more variety in each song," Matt explains. However, he was rather fortunate to be able to do so. "Both games I worked on had large cartridge ROMs. Enough space to store all the music and effects at a sample rate and compression which sounded decent." When asked how much space that took, he draws a blank, but tells us "it must have been more than most games, it was unusual to handle the music as we did".

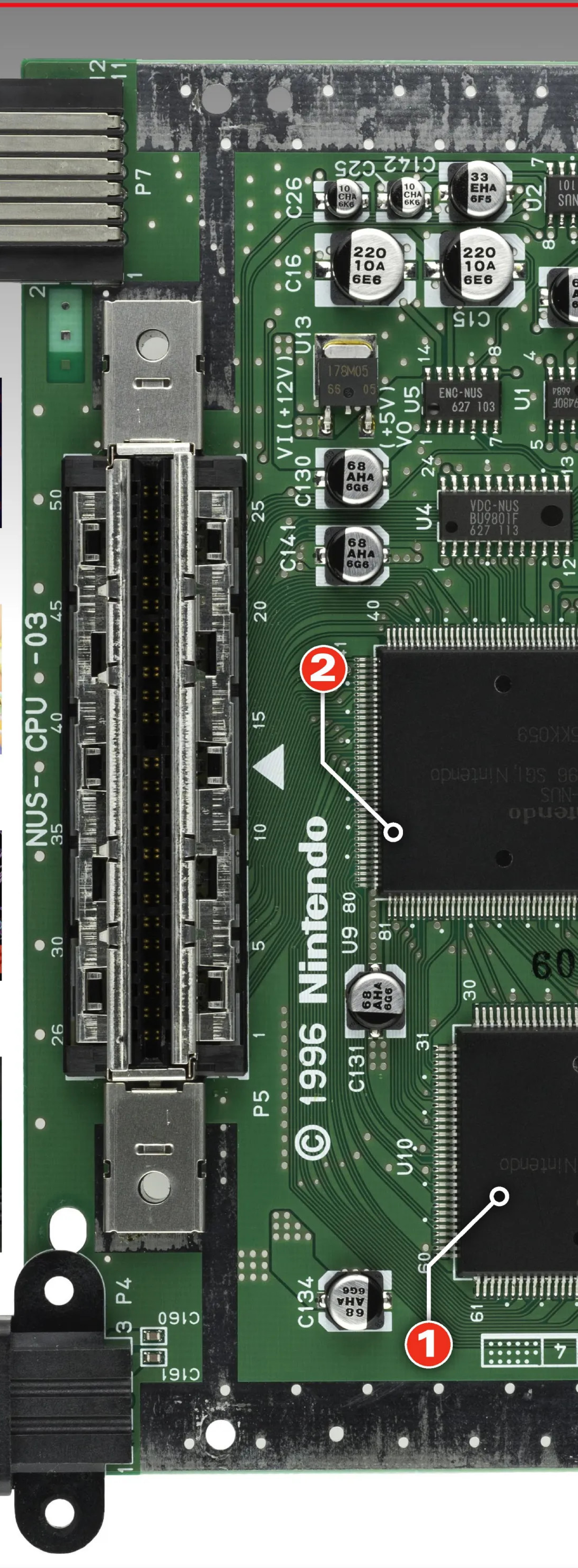
Even then, large samples could only take you so far – for example, *Tony Hawk's Pro Skater 2* on the N64 has a reduced selection of songs, each ▶

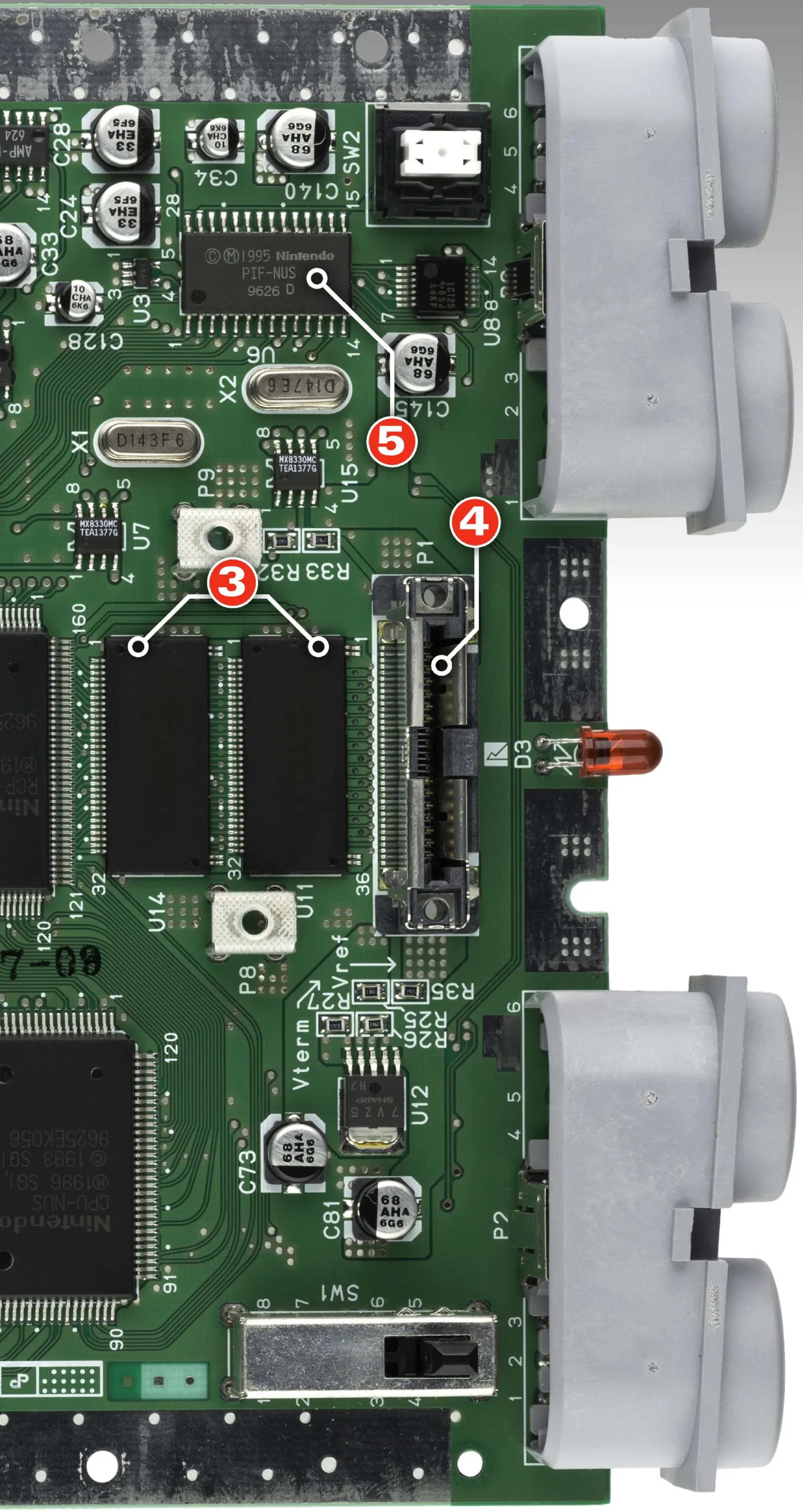
SUPER MARIO 64
PRESS START
» [N64] Giles Goddard put together Mario's interactive face in about two months. For many, its impact lasted far longer.

» [N64] Far fewer players would have been able to enjoy *Super Smash Bros* properly without the system's four control ports.

SURVIVOR
UNDERTAKER
» [N64] Unable to display long entrance video clips, *WWF No Mercy* used slideshows before cutting to the ramp.

PICKED UP SOME AMMO.
186 5
6 186
» [N64] Though N64 games looked very solid thanks to hardware-supported effects, they could sometimes suffer from low framerates.





Inside The

UNDER THE HOOD

A CLOSER LOOK AT THE N64 MOTHERBOARD

CPU-NUS

1 This is the N64's CPU, a MIPS R4300i clocked at 93.75 MHz. It uses the MIPS III architecture and is capable of performing both 32-bit and 64-bit operations. There is also a floating point unit included as part of the chip.

RCP-NUS

2 This is the Reality Co-Processor, which contains the Reality Signal Processor and Reality Display Processor. It is primarily responsible for producing the graphics and sound of N64 games. It also handles input/output operations.

RDRAM

3 The system's memory, totalling 4.5MB and connected to the RCP via a 9-bit bus. Most of the system cannot access the last 512KB, with the ninth bit only accessible by the GPU for purposes such as extra Z-buffer resolution.

RAM EXPANSION PORT

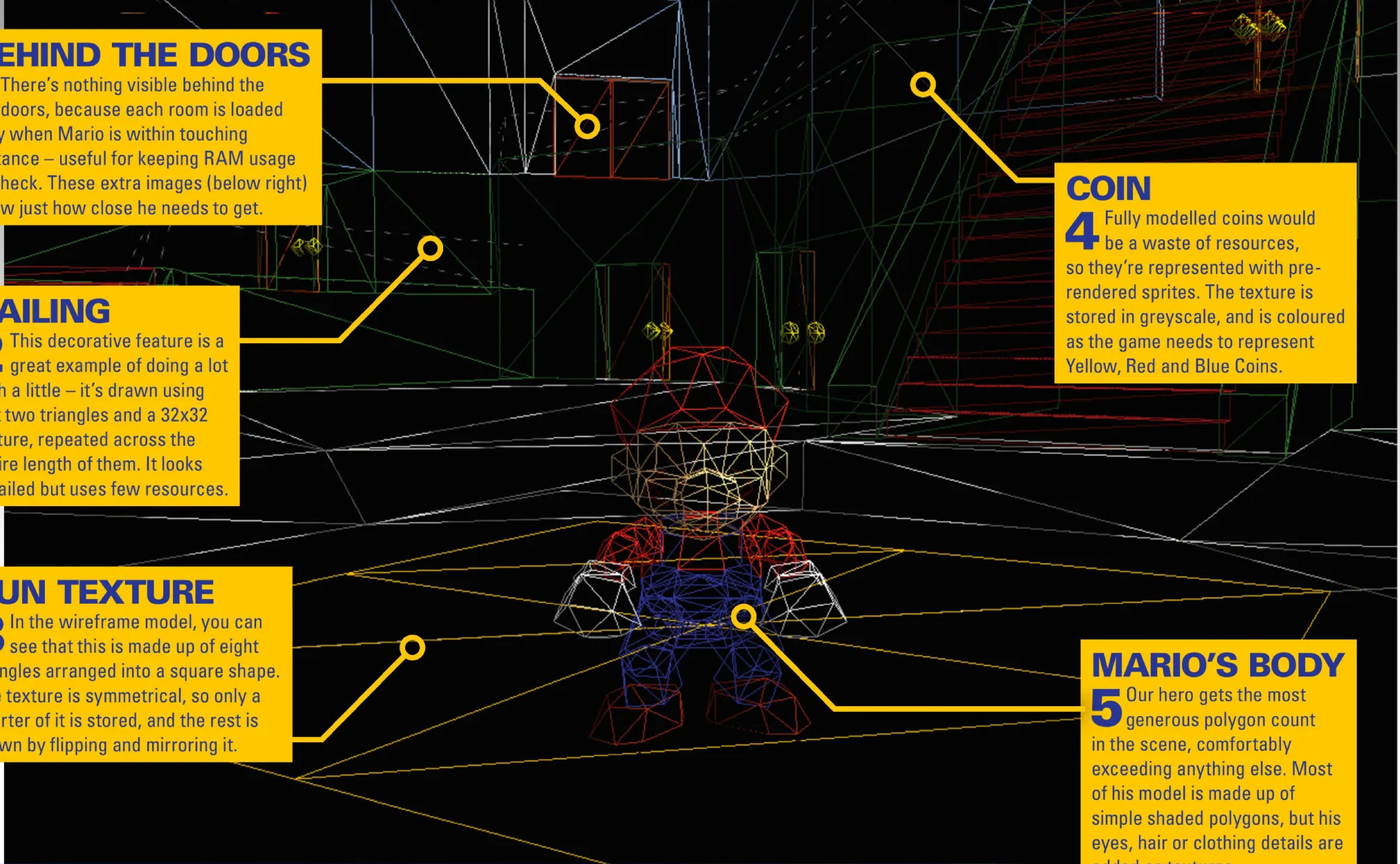
4 By default, a Jumper Pak is fitted here to terminate the RAM bus, but an additional 4.5MB RDRAM can be added via the Expansion Pak. If neither unit is present, the system will completely fail to boot, showing a blank screen.

PIF-NUS

5 The Peripheral Interface is attached to the RCP and handles inputs from controllers and connected accessories. It is also the chip that communicates with the CIC security chip in each cartridge for piracy prevention and region locking.

DOWN TO THE WIRE

BREAKING DOWN GRAPHICAL ELEMENTS OF A FAMOUS N64 SCENE



BEHIND THE DOORS

1 There's nothing visible behind the doors, because each room is loaded only when Mario is within touching distance – useful for keeping RAM usage in check. These extra images (below right) show just how close he needs to get.

RAILING

2 This decorative feature is a great example of doing a lot with a little – it's drawn using just two triangles and a 32x32 texture, repeated across the entire length of them. It looks detailed but uses few resources.

SUN TEXTURE

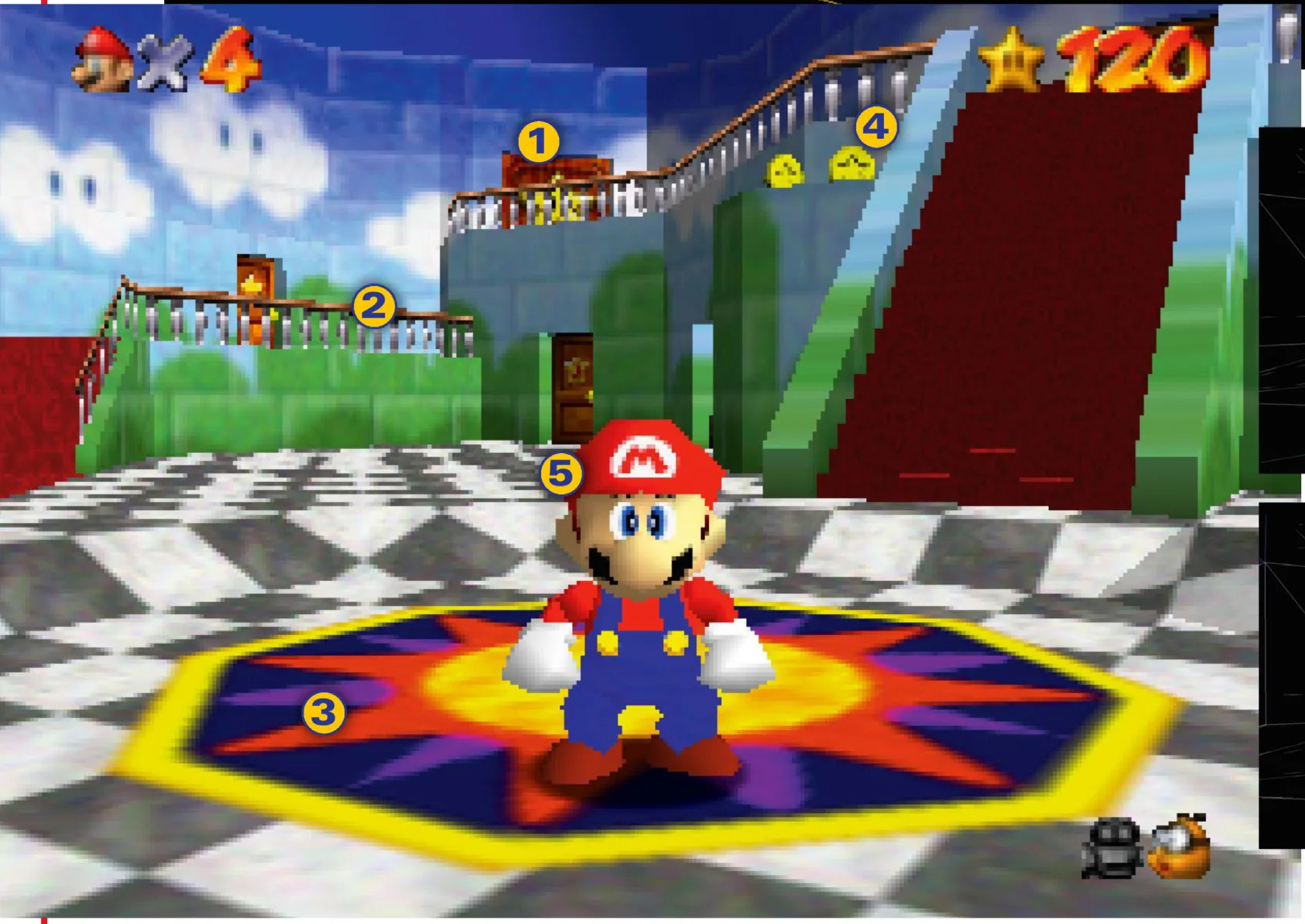
3 In the wireframe model, you can see that this is made up of eight triangles arranged into a square shape. The texture is symmetrical, so only a quarter of it is stored, and the rest is drawn by flipping and mirroring it.

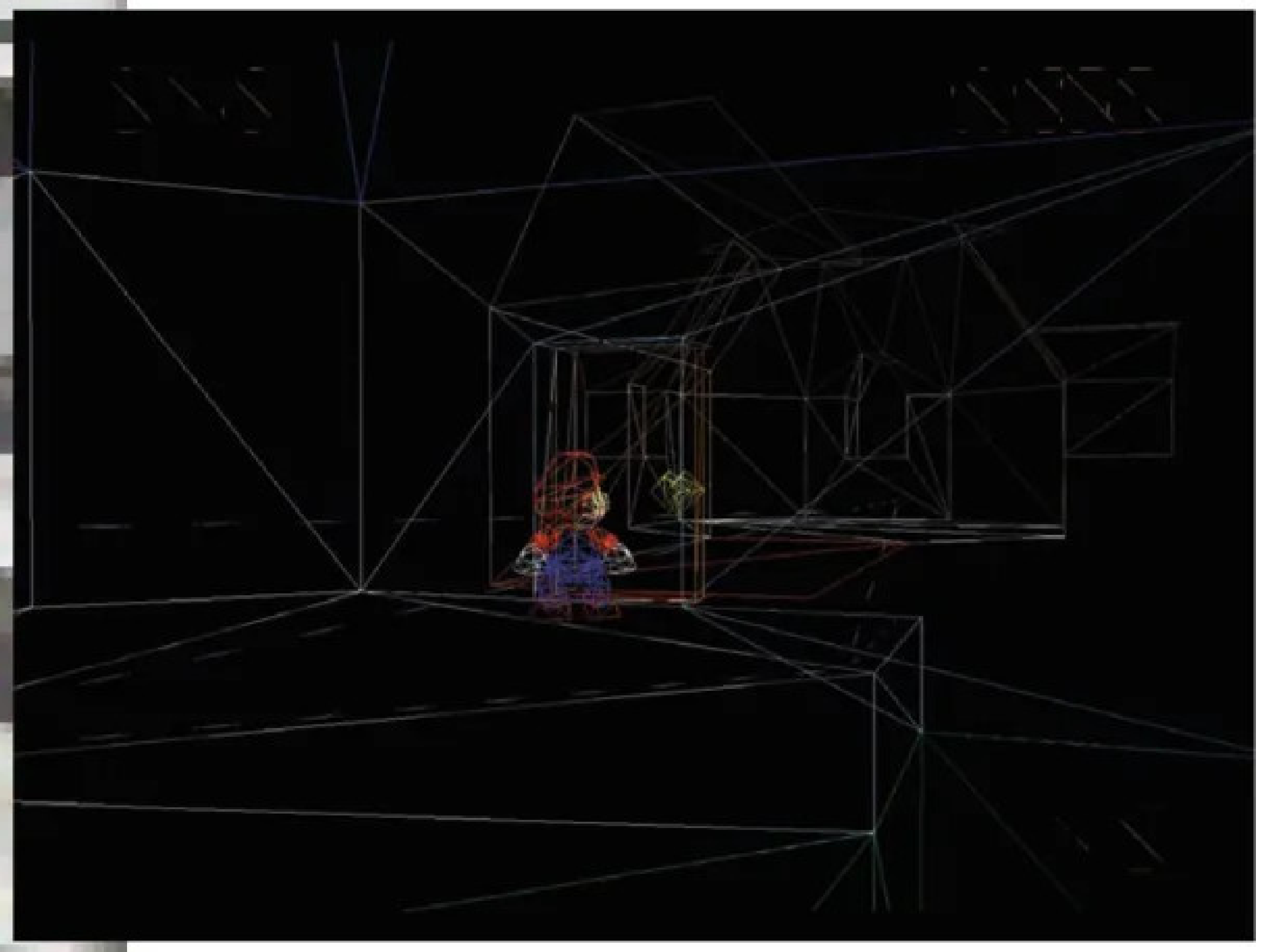
COIN

4 Fully modelled coins would be a waste of resources, so they're represented with pre-rendered sprites. The texture is stored in greyscale, and is coloured as the game needs to represent Yellow, Red and Blue Coins.

MARIO'S BODY

5 Our hero gets the most generous polygon count in the scene, comfortably exceeding anything else. Most of his model is made up of simple shaded polygons, but his eyes, hair or clothing details are added as textures.

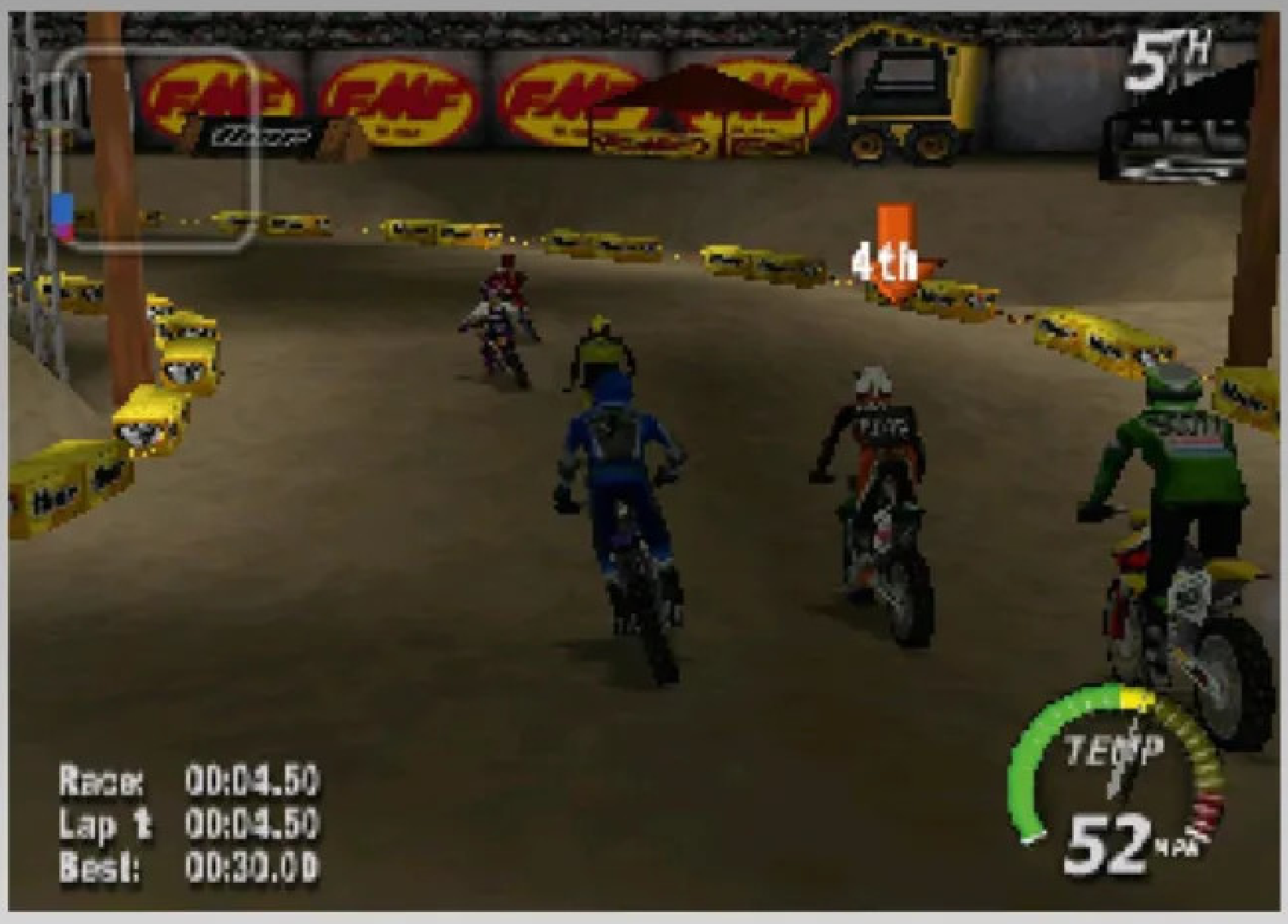




of which are formed of long repeating samples. More commonly, developers would construct music from short samples of instruments, as was done on the SNES – *Resident Evil 2* does this. But the use of cartridges was a problem for more than sound. The CD-ROMs adopted by Sony and Sega had the downside of slow loading and being easier to copy, but allowed for plenty of presentational fluff such as FMV sequences and extensive voice acting. Some developers, most notably Squaresoft, found that sticking with ROM cartridges simply represented too great a constraint on their ambitions, and moved to rival platforms. Other publishers were attracted by the low manufacturing cost of CDs, allowing them to manufacture games at less financial risk, as well as potentially offering them at a lower price.

Beyond the console's internals, innovation was extended to the interface of the system. The console came with four control ports as standard, making larger multiplayer games the norm – a simple change that made classics of games like *GoldenEye 007* and *Mario Kart 64*. More radical was its unusual, three-pronged controller. The central analogue thumbstick provided fine control over direction and speed of movement, while the quartet of C-buttons was designed for 3D camera control and the Z trigger provided a substitute for L/R depending on your grip. "Having had the privilege to work very closely with key Nintendo leaders, I got to learn from them and understand their focus on playful and surprising interactions and then the functional and simple way the hardware enables it," says Lee Schuneman. "It's a controller designed with both an eye to the future (3D) and connection to the past (2D) with an understanding that players and developers need time to get used to the change that was coming as 3D worlds became the norm. The reality is that the concepts from it remain to this day in *all* controllers. I always like that Nintendo walk their own path and design hardware to enable the games, not the other way around. It's never tech for tech's sake."

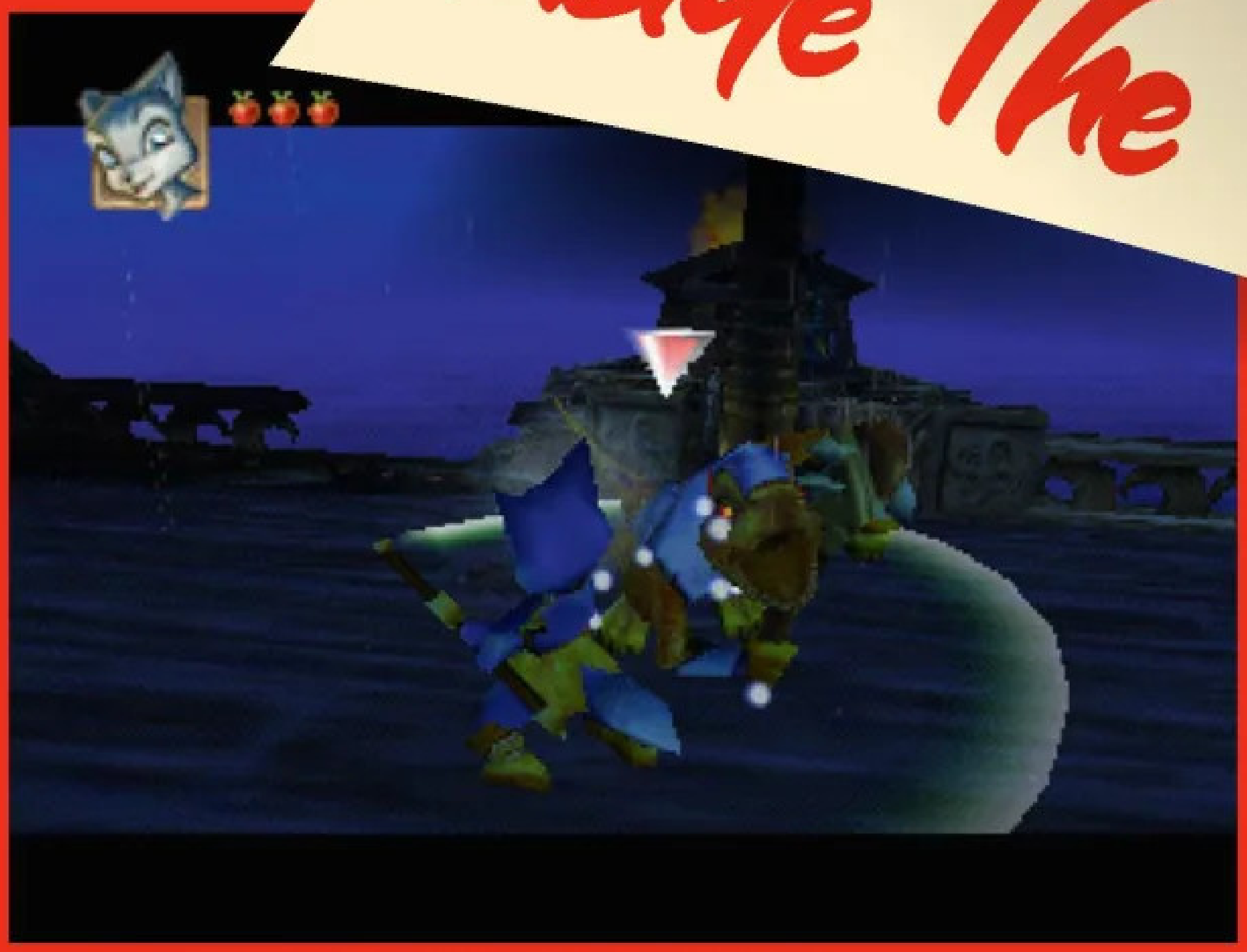
Of course, for all of its technical grunt, the N64 was defined as much by the talent of those developing for it as the system specifications. The special effects of *Super Mario 64* that made the console look a step ahead of anything else were as much a showcase of ingenuity as technology. "I think a lot of the stuff we were doing was made to highlight the hardware – it wouldn't look the same on a PlayStation," says Giles. "It was Nintendo, so they obviously had a lot of know-how, a lot of willingness to experiment with ideas without having to worry about going over budget too much. It was a bit of both – the artists at Nintendo are amazing, the programmers are amazing. It was the combination of having great hardware and a great team."

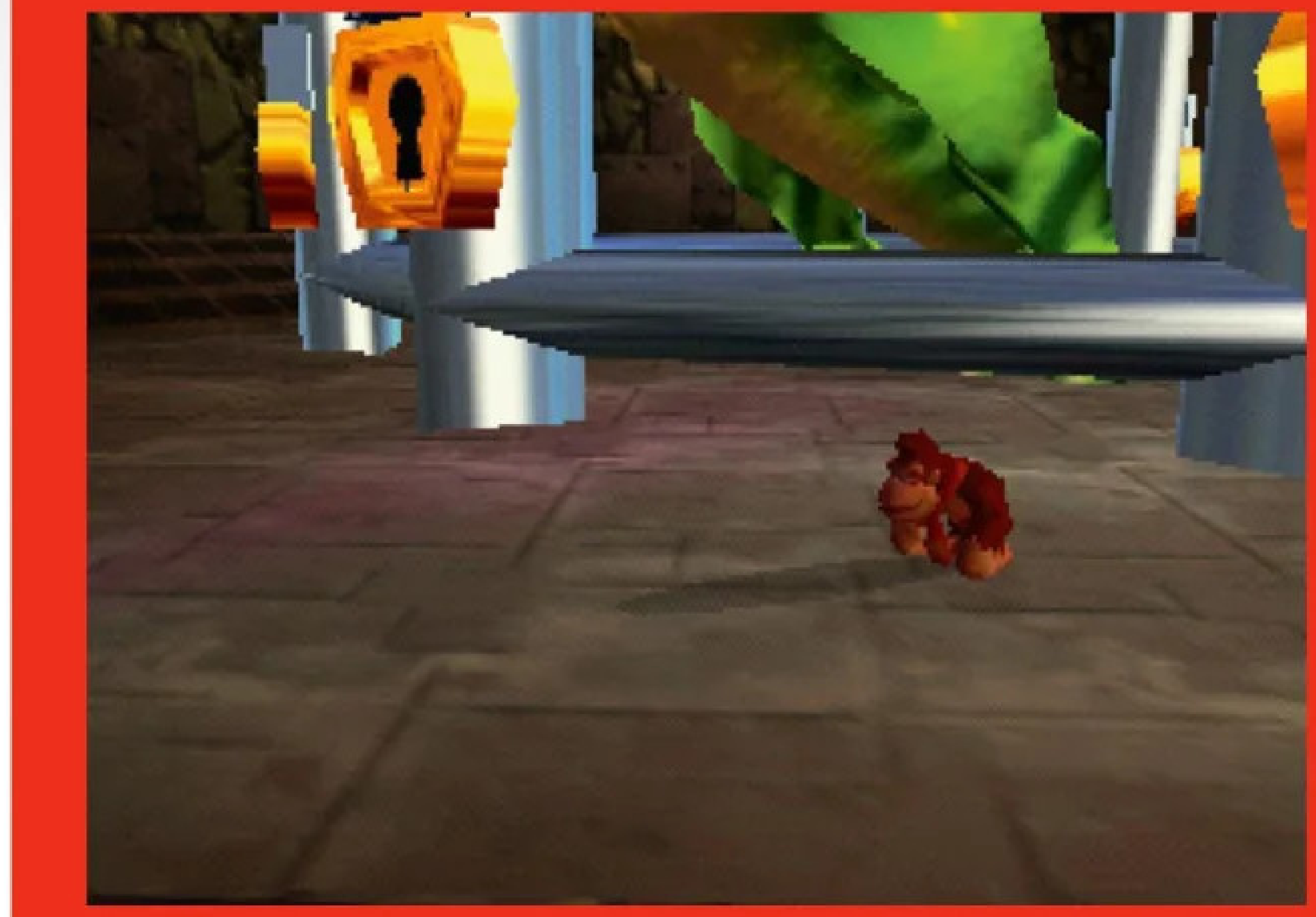

» [N64] *Excitebike 64*'s music was atypical in its use of the N64's audio capabilities, according to Matt Furniss.

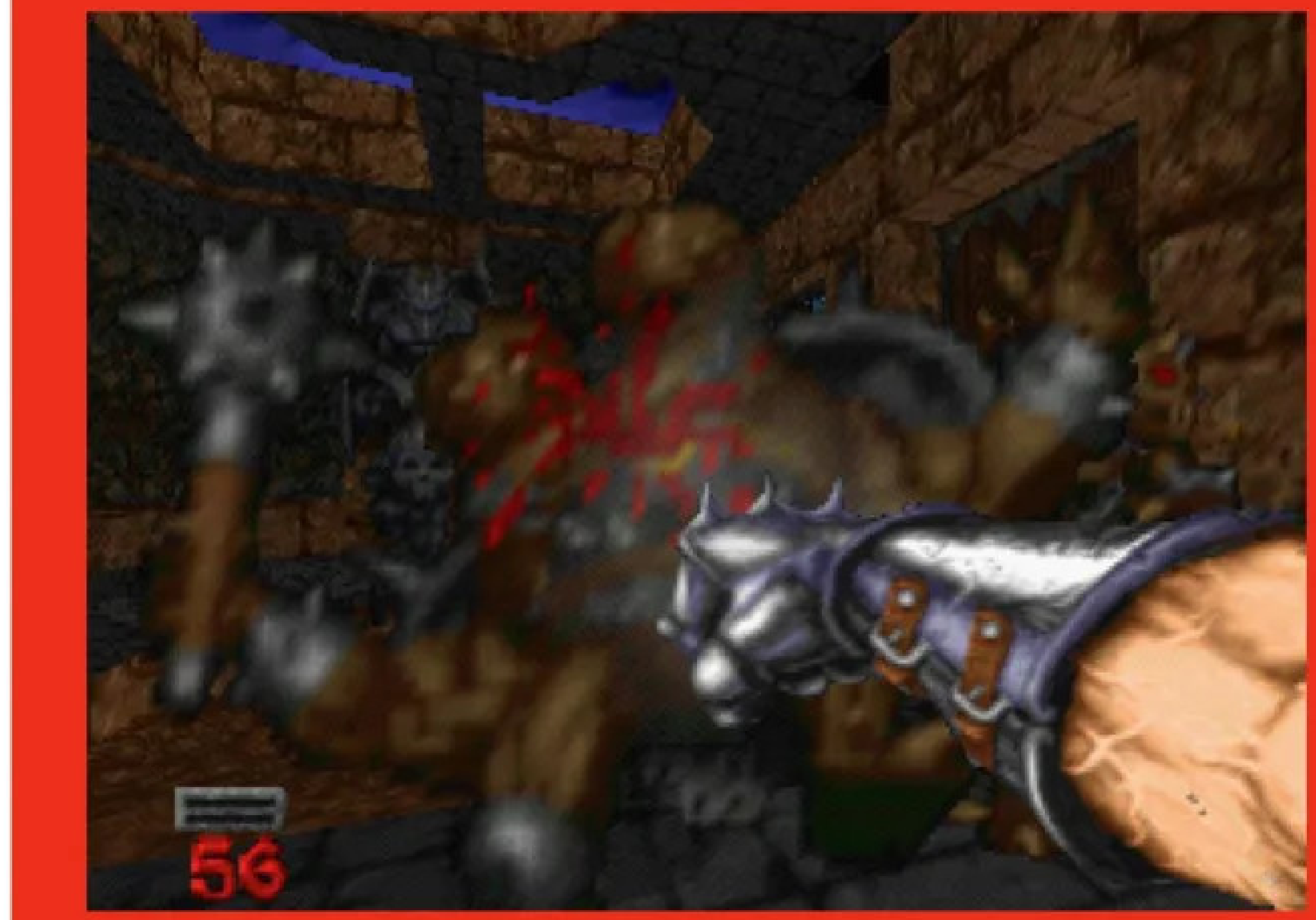
"I have never approached any game development thinking about the hardware, it's always what's the idea and let's do everything we can to make it real," says Lee. "Of course along the way you discover things that maybe you can or can't do but then you find a solution around it! Rare was (and I'm sure still is) full of great software engineers who were never satisfied with any limitation, so hardware weaknesses were never a problem and just something to work around." Mostly, he remembers the people over the hardware. "The amount of world-class game designers (Miyamoto, Iwata, Ken Lobb, all the Rare founders) that I got to interact with over those N64 years was pretty amazing in hindsight, and even a prerelease *Ocarina Of Time* to learn from."

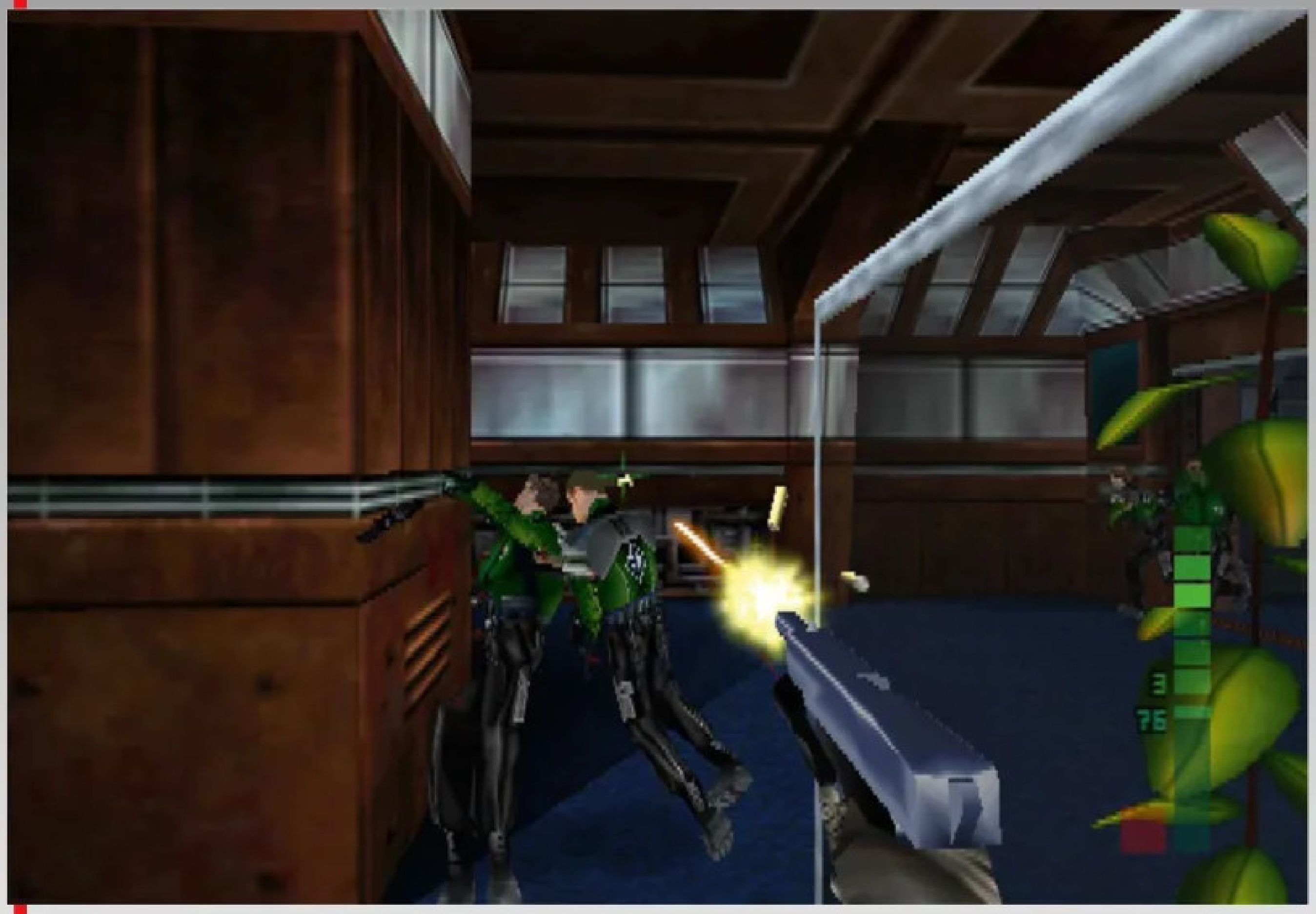
As the N64 aged, there were a couple of attempts at expanding its capabilities. The 64DD was a disk drive that used proprietary magnetic disks with a 64MB capacity and some capability to save data. This was actually first shown to the public at the Shoshinkai show in 1996, but was heavily delayed, with little information revealed to the public. According to Amir, who was working on *Mario Artist: Paint Studio* at Software Creations, it wasn't just the public that were left in the dark. "I actually left the project to help start ZedTwo and work on *Wetrix* before *Mario Artist* was finished," he explains. "That project brings back a lot of mixed memories – it just went on for so long, and at various times

» [N64] As much as the N64 was a hotbed of innovation, some of its best games were just established ideas done really well.

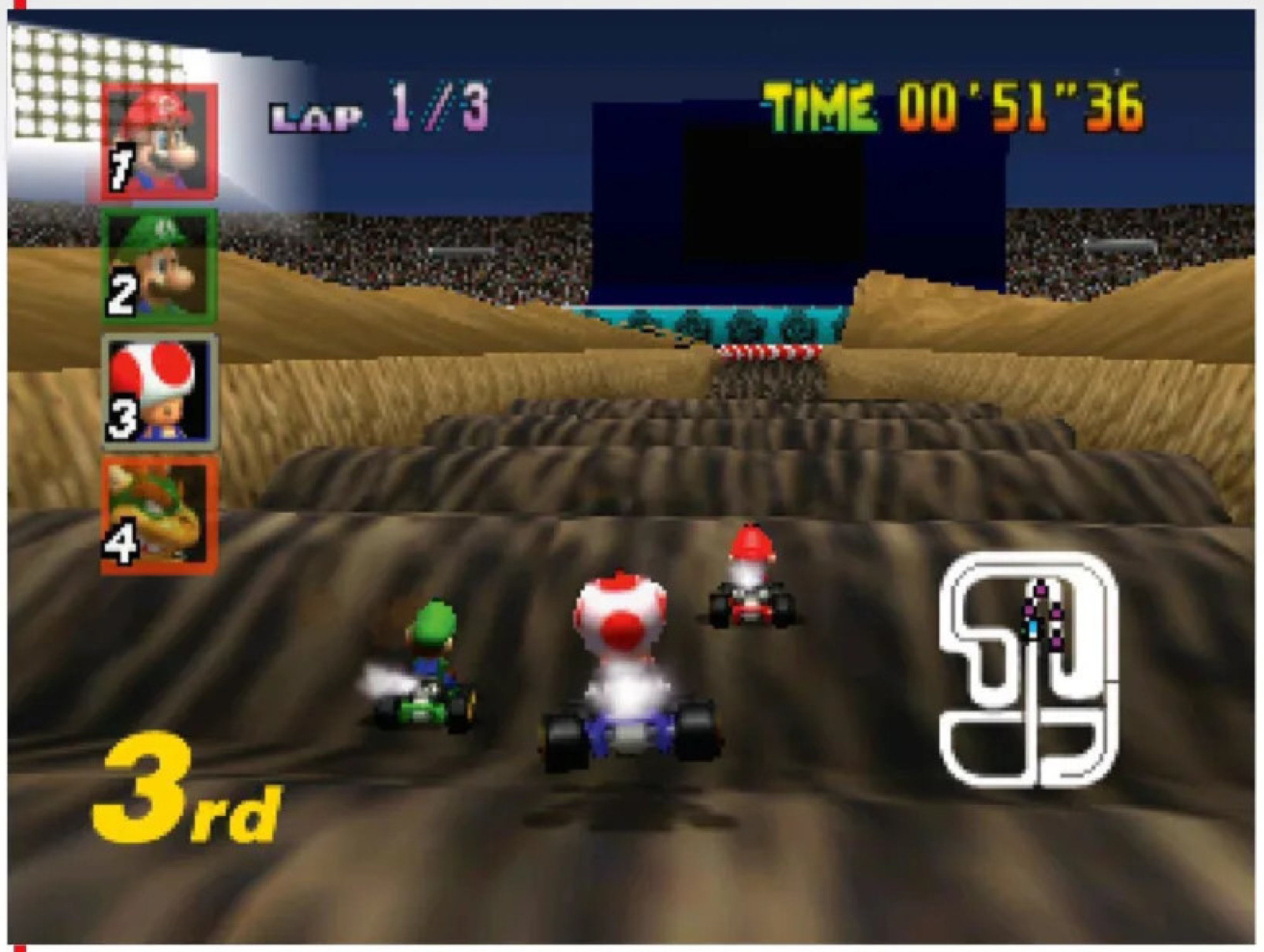

» [N64] Even with the Expansion Pak, the ambitious *Dinosaur Planet* would have been too much for the N64.


» [N64] This area of *Donkey Kong 64* uses dynamic lighting, relating to the clever use of the Expansion Pak described by Mark Stevenson.


» [N64] Bilinear filtering helped to avoid the blockiness seen with close-up enemies in first-person shooters on other hardware.



» [N64] Only a few games required the Expansion Pak, so as not to split the user base into haves and have-nots.

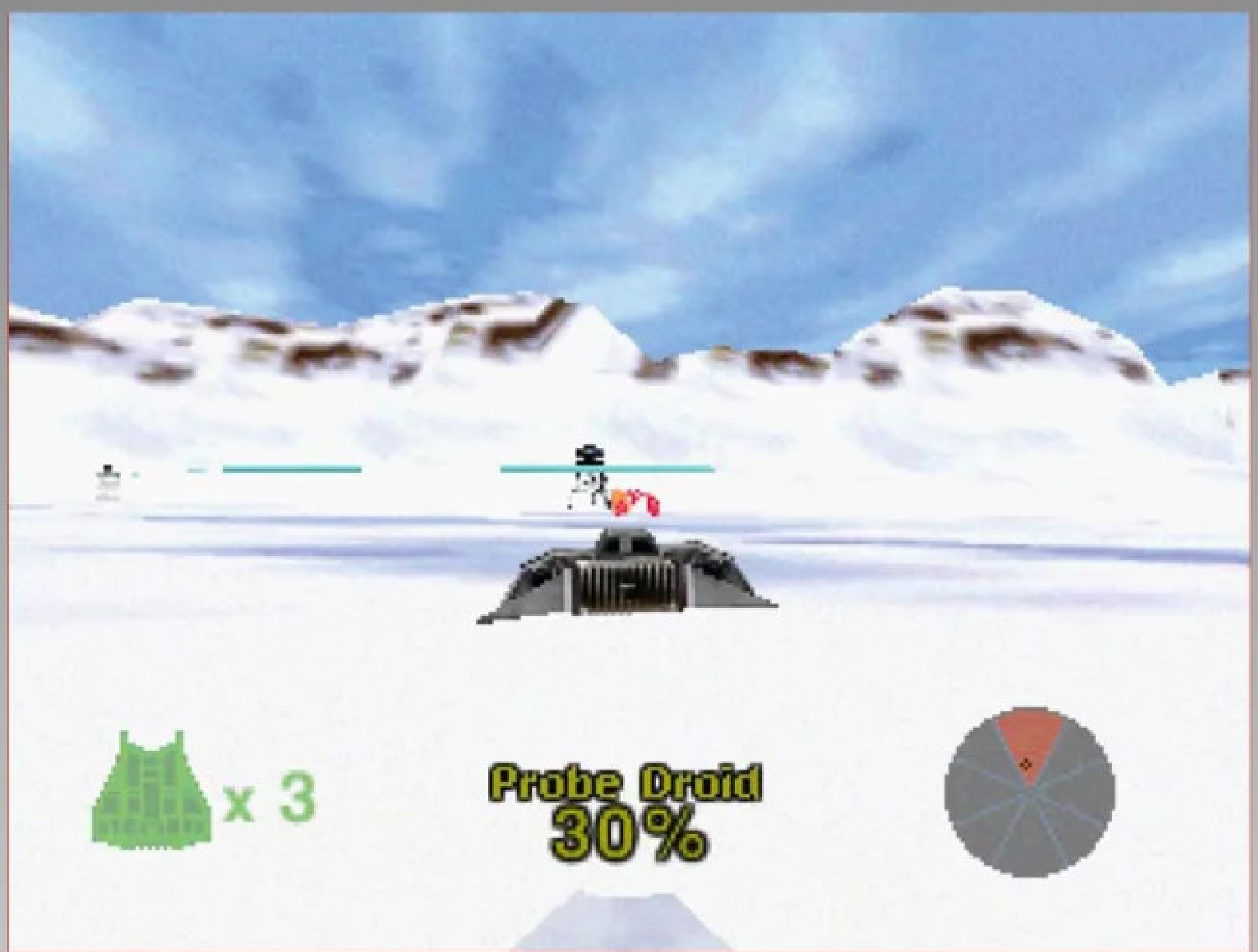


» [N64] Pre-rendered objects on real-time 3D assets was a fairly common look in N64 games.

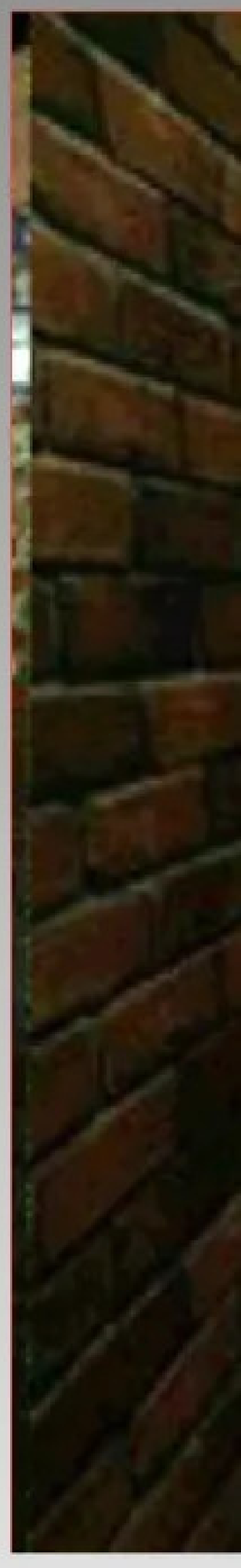
▶ it didn't feel like it was ever going to come out. During my time on the project, some three to four years, we never even saw prototype 64DD devkits." The device finally arrived in Japan in December 1999, and received very little support, with *Doshin The Giant*, *F-Zero X Expansion Kit* and *SimCity 64* being its most notable games.

However, the 64DD came bundled with something that wound up being far more important – the Expansion Pak. This plug-in module doubled the RAM of the console, and was supported by dozens of cartridge games. Most games used this to offer high resolution modes, but some such as *San Francisco Rush 2049* included exclusive gameplay content such as extra stages. The most ambitious three were *Donkey Kong 64*, *Perfect Dark* and *The Legend Of Zelda: Majora's Mask*, which all required the Expansion Pak. Mark Stevenson remembers it being beneficial in terms of standard things like level size in *Donkey Kong 64*, but there were also more creative uses. "One thing I remember that we did use it for was that we had a lot of dynamic lighting in there, which was hard to do and expensive," he recalls. "One of the engineers wrote a system whereby you'd go into a cave area, and there'd be a swinging light – the first swing of that light, it'd record all of the colour changes on all of the vertices in that area, and then save it as data and just play it back as an animation rather than going on to calculate the lighting constantly. You'd get a little bit of slowdown when you went in, but after that it was nice and smooth." Even with the memory boost, developers did eventually find the system's limits – something you can see in the leaked demo of Rare's unreleased game *Dinosaur Planet*. "I think we were running at 15fps most of the time so clearly had pushed it too far! But as with *Diddy Kong Racing* (and much of the *Dinosaur Planet* team were from that team also) we just wanted to realise our vision and screw the technical limitations," says Lee. "I had a great moment with *Dinosaur Planet* when I demoed the game on a giant projection screen at Rare with ex-Nintendo Of America president Arakawa-san and it's like this big cinematic-style game coming out of an N64… lots of applause and a happy moment for the team." The game ultimately received a new direction and was redirected towards the N64's forthcoming successor. "*Star Fox Adventures* happened which was both a blessing and a curse but out of that transition a few of us (myself, Kevin Bayliss and Phil Tossell) at least got to go work with Miyamoto-san and Iwata-san in Kyoto." Other games made similar leaps to the GameCube, including Capcom's *Resident Evil Zero* and Silicon Knights' *Eternal Darkness: Sanity's Requiem.*

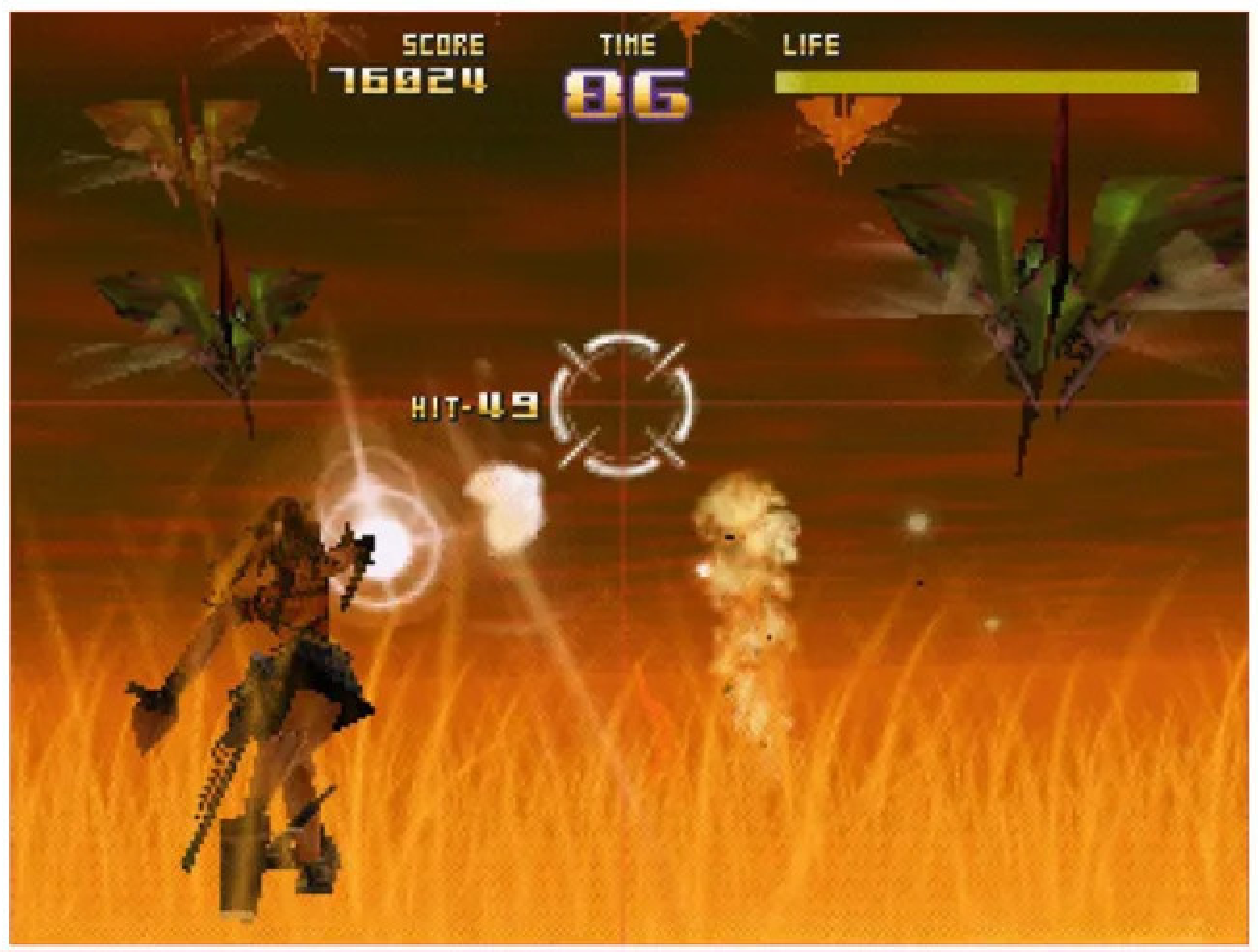
Although the Nintendo 64 was a powerful console with many advanced features, it was



» [N64] Eric Johnstone got to spend a lot of time at SGI watching the hardware evolve while developing *Star Wars: Shadows Of The Empire.*



SUPER MARIO 64
007
NINTENDO 64



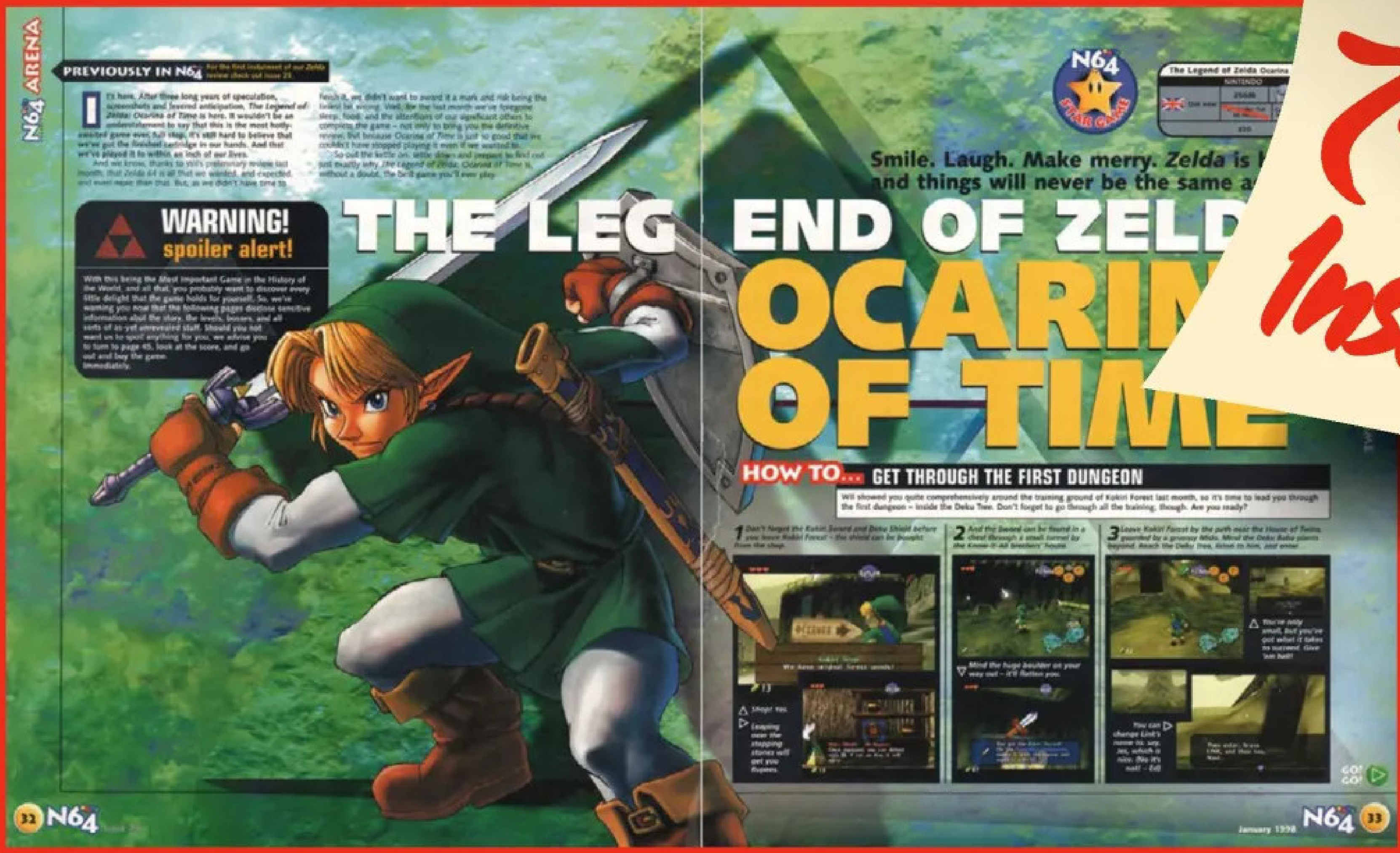
» [N64] Not every late game used the Expansion Pak to look great – *Sin & Punishment* was utterly superb on stock hardware.

» [N64] Though it required compromises, the N64 conversion of *Resident Evil 2* was a miraculous use of a 64MB cartridge.

unable to repeat the success of the SNES, which did eventually become the best selling console of its generation. The N64 sold fewer units than its 16-bit predecessor, and Nintendo fell behind Sony to become a distant runner-up in the global home console market. The N64 struggled terribly in Nintendo's traditional stronghold of Japan, where the console's relative lack of RPGs was a real problem, and it even wound up selling fewer units than the Sega Saturn. It also has fewer software releases than either of its competitors – just under 400, compared to over 1,000 for the Saturn and over 4,000 on the PlayStation. While it should be noted that Nintendo remained profitable throughout the N64 years, judged by these measures the console does not look like a success.

But it's impossible to deny the legacy of Nintendo's console. For a start, it was influential at a hardware-design level. As Lee pointed out, every console manufacturer eventually borrowed bits of the N64 controller, even if its distinctive shape wasn't one of them, and four controller ports became standard until wireless connectivity made them redundant. What's more, it's arguable that the N64 did more than any of its rivals to advance 3D gaming. It was a small but significant step forward graphically – when compared to the blocky textures and wobbly walls of PlayStation and Saturn games, N64 games generally look more solid and stable. But more than that, the hardware arrived at a time when developers were still working out how to design 3D games, and the reason that the N64's hit list is so familiar is because so many of its games provided a template for the rest of the industry to follow. It's certainly telling that Nintendo didn't radically alter its designs for *Mario* and *Zelda* on the GameCube.

More than 25 years on, that's perhaps the best way to contextualise the N64's place in history. It's a piece of hardware that was designed by experts in 3D, who didn't just care about having it as a selling point, but making it look better than anyone else did. It ran games that elevated the standards that players expected of 3D games, from control schemes to inventive stage designs. Although it wasn't the most popular platform of its day, the N64 was the console that confidently signposted our way into the 3D future. *



PREVIOUSLY IN N64
WARNING! spoiler alert!
THE LEG END OF ZELD
OCARIN
OF TIME
Smile. Laugh. Make merry. Zelda is
and things will never be the same a
HOW TO... GET THROUGH THE FIRST DUNGEON
N64

PRESS AND IMPRESSED

JES BICKHAM OF N64 MAGAZINE RECALLS HIS TIME WITH THE CONSOLE

Describe what it was like seeing N64 games for the first time.

The first N64 game I saw (and played) in the flesh was *Super Mario 64* on a demo pod in Dixons in Bristol. (I didn't write for *N64* until issue 7.) It was mind-boggling; the chunky 3D visuals, the movement and momentum, the sense of space and play. It's hard to overstate the translation of 2D to 3D gaming as presented in that game alone; what an impact! And it felt like an ambassador for the future and all the N64 games that followed: *this* console can do *this*, and *this*, and *this*.

What do you feel was the most technically impressive game on the console and why?

Early doors, *Wave Race 64* was a contender. That water, for all its chunky, polygon-heaving look now, remains remarkable (the GameCube sequel *Blue Storm* couldn't touch it). The *feel* of it! *Perfect Dark*, at times, was transcendent, even if its reach outstripped its grasp at times. (Anyone who tried to play Counter-Ops with a single-digit framerate can testify.)

How important do you feel the inclusion of four control ports was to the success of the system?

Essential. The hundreds or thousands of hours we lost in the N64 office to multiplayer games of *Mario Kart 64*, *Smash Brothers* and *GoldenEye* were testament to that – every. Single. Lunchtime. And that was a thing that translated to bedrooms and living rooms globally. The multiplayer experience on the N64 was glorious – no need for multi-taps, just plug in your controller and go.

N64 Magazine seemed very hyped about the Expansion Pak at the time. Do you feel that excitement was justified?

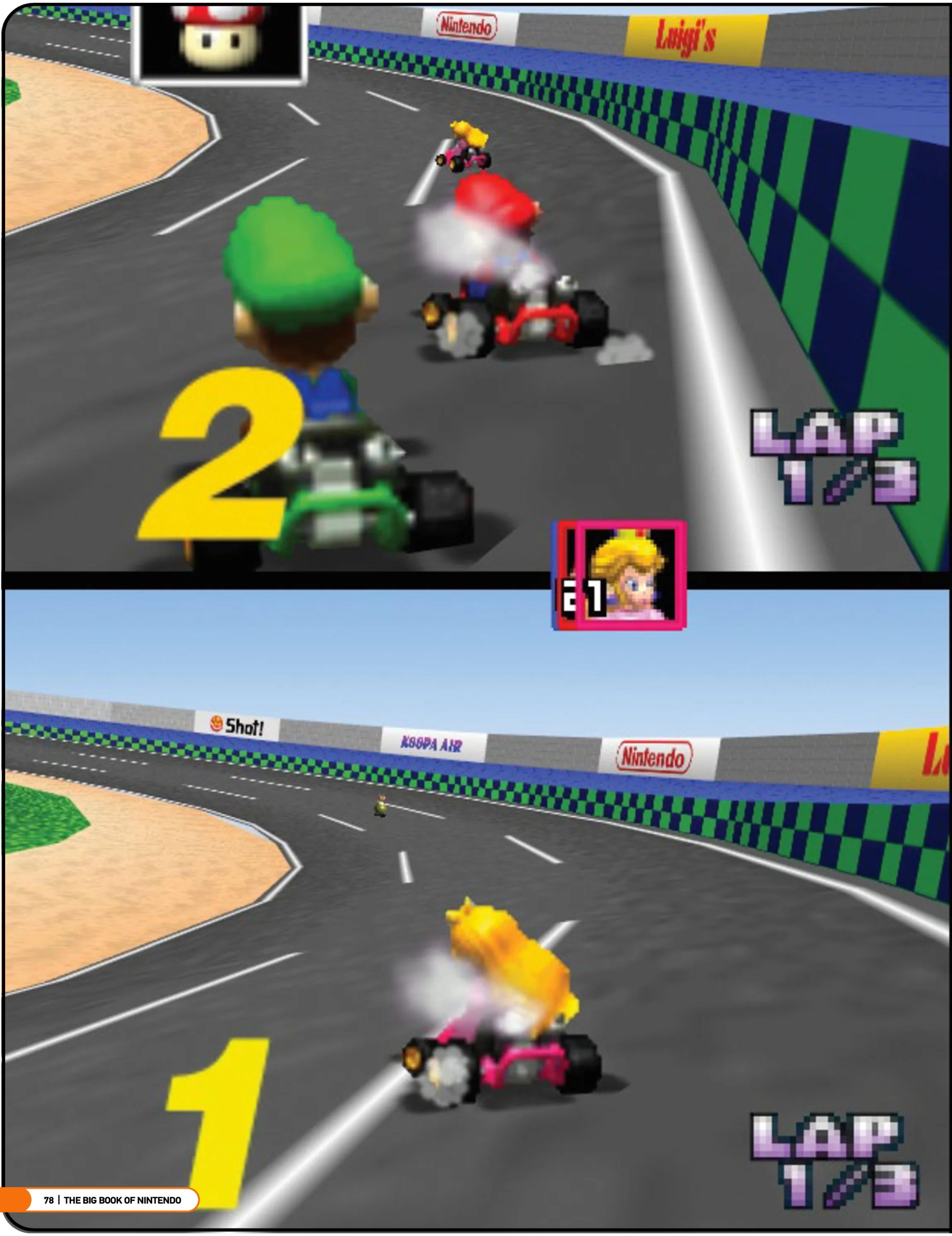
I think, looking back, it was exciting as it was a fix and a riposte to some of the bad press the N64 was getting at the time. Being frothing-at-the-mouth fans of gaming's great underdog, we were understandably thrilled about it; blurry visuals were always a criticism, then *Turok 2* rolled around and looked like a million dollars. Was that excitement justified? No, probably not, it was more of a marker of where the critical consensus was at the time, but it was a signpost of our love for the N64 and its games. And, you know, the Expansion Pak gave us the full *Perfect Dark* experience.

Why do you think *N64 Magazine* remains so well-loved today?

We all loved Nintendo. I mean, really, really loved Nintendo; and that passion and enthusiasm carried right on through to the readers. We were honest, too – as anyone who remembers the infamous *Superman 64* or *Mortal Kombat Mythologies* reviews will know – and I think that honesty meant people believed us when we were excited about something, as well as disappointed.

Also, everyone on the team was brilliant at their 'thing' and funny in their bones. We also had some of the best writers in the business. Every day was magic for us, and I think that came through on the printed page. Glory days!

N64 FOR NINTENDO 64 FANS
£2.95
It's Rare's autumn shocker! DIDDY KONG RACING
N64
HUGE U.K. REVIEW!
DOOM 64
The hard bits made easy!
Secret levels revealed!
How to kill everything!
Massive 8-page review!
Yoinks! It's YOSHI
Yoshi's Story in all its glory!
AH, MR BOND...
Rare's incredible GoldenEye appears in Japan and the US! Complete review!
GANBARE GOEMON
TETRISPHERE
7


Nintendo
Luigi's
2
LAP
1/3
2
1
Shot!
KOOPA AIR
Nintendo
1
LAP
1/3

Nintendo
LAP
1/3
3

Mario Kart 64

SNEAKY TOAD FOR THE WIN

» RETROREVIVAL

DJ

» NINTENDO 64 » 1996 » NINTENDO EAD

My wife Mel and I have been renting out our spare bedroom to students for years, and our latest tenant, Logan, hails from Hong Kong. Typically, the students are knackered and jet lagged when they turn up, and Logan was no different, so we gave him some food and he went off to bed for a few hours.

Later on that day, suitably refreshed, Logan joined me for a gaming session with Mel and my daughter, Alice, in my retro shed, as he had told me about his love for videogames earlier that day. He joined us for a quick match of *GoldenEye* and while he struggled with the controls and had difficulty finding guns, he had a whale of a time, and thought it was hilarious when he managed to slap Alice to death after failing to equip his pistol.

We then moved over to *Mario Kart 64* and I asked him if he had played it before, to which he replied no. Despite his unfamiliarity with the game, it quickly became obvious that even though he'd never played the game before, Logan was very, very familiar with the series, and he quickly managed to make us all look very silly indeed as he sped around the tracks with Toad, bombarding us with Red and Green Shells and slowing us down with bananas and other items, laughing while he did so.

I've not had a game of multiplayer *Mario Kart 64* for years, but playing it with Logan, Mel and Alice instantly reminded me of those amazing multiplayer sessions I had enjoyed in my early twenties, either with Mel at our old home, or with friends on a Friday night when we first moved in to the home we live at now. Yes, the Blue Shell is a pain in the ass, and, yes, it's more of a party game than a racing game, but there's no denying that it remains a lot of fun, particularly when you tackle the more challenging 150cc mode. We ended up spending the best part of an hour on Nintendo's kart racer, only stopping for tea. Logan's already asked when we'll be playing it again, so he's clearly up for a rematch. Next time *I'll* be playing Toad, though. ✱

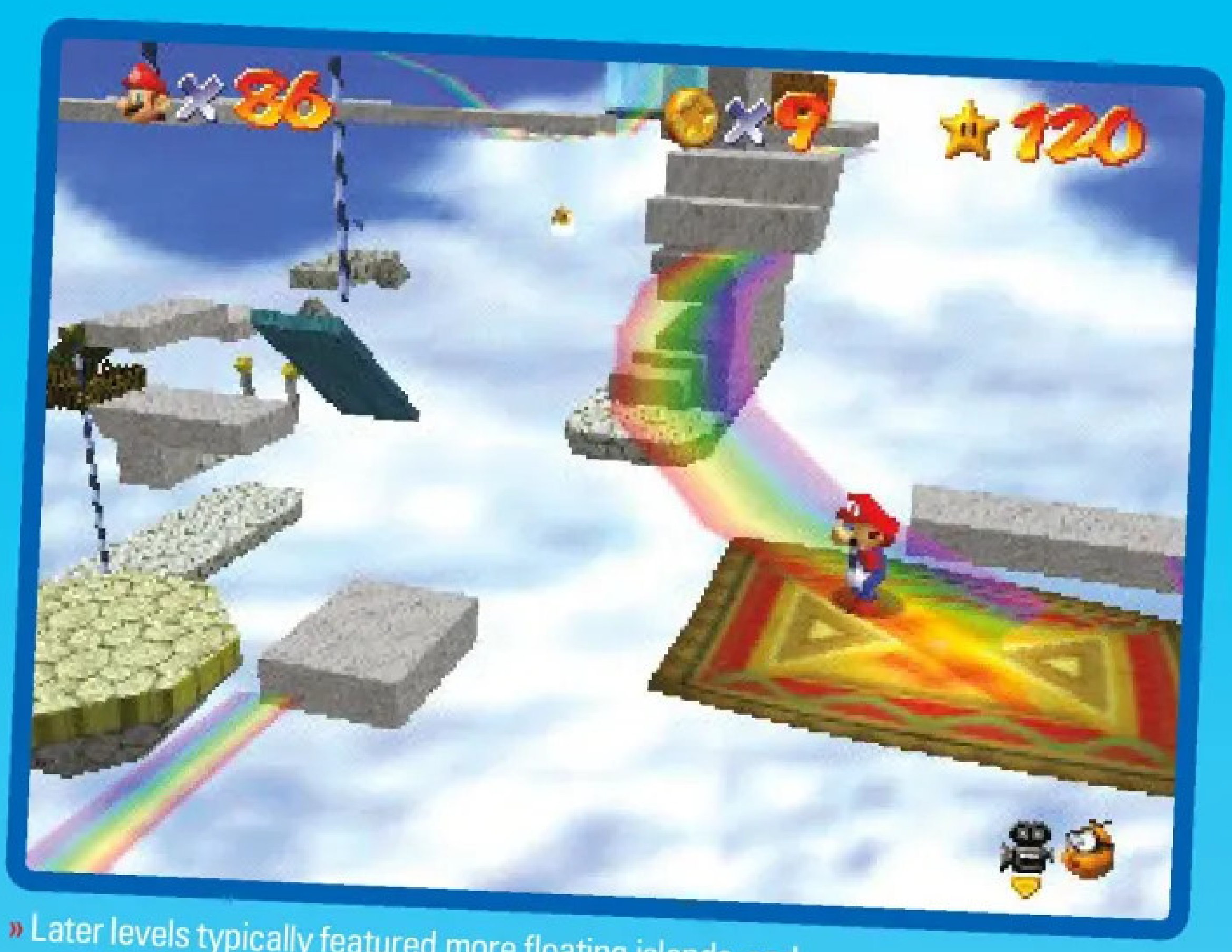
Shot!
Luigi's
LAP
1/3
4

NINTENDO'S 3D GAME-CHANGER

In an age when it was said that 3D platform games didn't work, Nintendo proved us all wrong. Nick Thorpe and Luke Albigés examine the impact of the N64's most revolutionary game…

Nintendo has always been a company that has set its own agenda, and that has rarely been more apparent than it was with the N64. Rather than following the likes of 3DO, Sega and Sony into the CD-ROM market, it stuck doggedly to cartridges. Instead of simply evolving the SNES pad, it produced a radical three-pronged controller design. Neither of those design choices proved to be the future – it's a tall order to convince an entire industry to do things differently, after all. The thing that made people take note was *Super Mario 64*, though – a bold and unique design, just like the machine it ran on. However, unlike its host hardware, it made a profound impact on the rest of the industry, shaping the development of future platform games and 3D games in general for years to come.

Of course, *Super Mario 64* had to be a bold design. The one common feature of 3D platform games released before *Super Mario 64* is that they were all distinct creations, as no two developers had the same vision of how to adapt the genre to the polygonal revolution. Exact gave us *Jumping Flash!*, a game which offered free-roaming stages, viewed from a first-person perspective. Realtime Associates delivered *Bug!*, which featured 3D stages comprised of interlocking straight paths, thus strictly regulating player movement. Xing's *Floating Runner* utilised free-roaming stages but employed a fixed perspective that made it feel almost like a top-down 2D game. Even if Nintendo had wanted to follow convention with Mario's 3D debut, there was simply no convention to follow.



» Later levels typically featured more floating islands, and consequently greater risk of death by plummeting.

The other reason that it had to be a groundbreaking game was the weight of expectation placed upon it at the time. "Up until *Mario 64*, and probably until *Mario Galaxy*, there has always been expectation surrounding a new Nintendo console and with it a new *Mario*," says Paul Davies, who was the editor of *Computer & Video Games* during the development and release of *Super Mario 64*. "So, even though we had no idea how this would shape up, the prospect of *Ultra 64 Mario* was enough to affect your breathing for a while."

Even those close to Nintendo weren't aware of what was in the works. "I was working for Software Creations at the time and they were part of the original 'Dream Team' of developers working on N64," recalls John Pickford. "I was lucky enough to be part of a group to visit the Shoshinkai 1995 show in Tokyo for the first unveiling of the Ultra 64 and its software. When we landed at the airport I remember bumping into several other British developers including the Stampers from Rare and David Jones from DMA design. David said something along the lines of, 'I hear *Mario* is looking very good.' That was the first time I had heard there was a *Mario* game in development. There had been zero publicity or even mention of *Mario* until that point."

» John Pickford was one of the early 'Dream Team' developers for the N64 and had an early glimpse of *Mario 64*.

DOFFING THE CAP

A Hat In Time director Jonas Kaerlev on how Super Mario 64 inspired and influenced his crowdfunded 3D platformer

When did you first encounter *Super Mario 64*, and what impression did you get from it?
I experienced *Super Mario 64* for the first time in the late Nineties. It was the first game I played that was fully 3D, so it was really impressive at the time.

I wasn't great at English back then, since I'm not a native English speaker, so a lot of the dialogue got lost on me, but that didn't stop me from getting all 120 Stars. The presentation made it easy to fill in the gaps and imagine what the characters were saying. If I didn't know what to do because the dialogue was the only guide, I'd just explore the level until I found out what was going on – this sparked my interest in games that provide an interesting world to explore.

What were your favourite parts of *Super Mario 64*?
There are so many good parts! I think everyone remembers the piano in Big Boo's Haunt, the vertical climb up Whomp's Fortress, and plotting vengeance against the bird who took your hat in Shifting Sand Land. Peach's Castle is also one of the best parts of *Super Mario 64* – it feels so mysterious, almost like a full level in and of itself.

Which 3D platform games do you think were the best successors to *Super Mario 64*?
Super Mario Sunshine is definitely one of the best, and it's a *literal* successor to *Super Mario 64*. It stays true to the formula that *Mario 64* created, but adds more flavour to the world, making it all seem like a real, connected place. I like how the levels transform over time. It's so cool to watch Delfino Plaza get flooded with water when Corona Mountain erupts.

Psychonauts by DoubleFine is also a really great spiritual successor! It's a bit more story-based, and the levels are amazing, especially Whispering Rock and The Milkman Conspiracy. *Psychonauts* even did *Super Mario Galaxy* gravity before that was a thing!

Which elements of *Super Mario 64* have you drawn inspiration from for A Hat In Time?
Similar to *Super Mario 64*, every mission in *A Hat In Time* is centred on a Time Piece the player has to collect. A lot of the levels undergo massive changes for every new mission, to make the level feel fresh on every visit.

At first, you might be defeating the Mafia Of Cooks to collect your Time Piece, and next you're a detective in the mission 'Murder On The Owl Express'. Every new mission has a story, and you'll get to understand more about the levels and characters on every visit.

As a developer of 3D platform games, how do you seek to differentiate *A Hat In Time* from genre-defining games like *Super Mario 64*?
A Hat In Time takes a different approach to both gameplay and story. For gameplay, the player's moveset is completely different, using a double-jump and an air boost to navigate both horizontal and vertical space. The player can also change and upgrade the moveset by collecting badges and putting them on their hat. This way, we reward players for exploring with features that enrich their experience. For story, every level in *A Hat in Time* is called a Chapter. Every Chapter focuses on a single location, be it Mafia Town, Subcon Forest, or the Owl Express train. Additionally, every Chapter introduces a new cast of characters, and these characters stick with you for the entire Chapter, until you reach the Chapter finale, where things go off the rails! In Subcon Forest, you'll be signing your soul away in contracts to The Snatcher, and on the Owl Express, you'll have to choose whether the angry Conductor or the smooth DJ Grooves is your friend, or your foe.

A Hat in Time also supports multiplayer, both local and online. We took inspiration from a *Mario 64* hack, and saw a lot of potential to fully realise multiplayer for *A Hat in Time*. You can defeat bosses, collect Time Pieces and have a good time your friends.

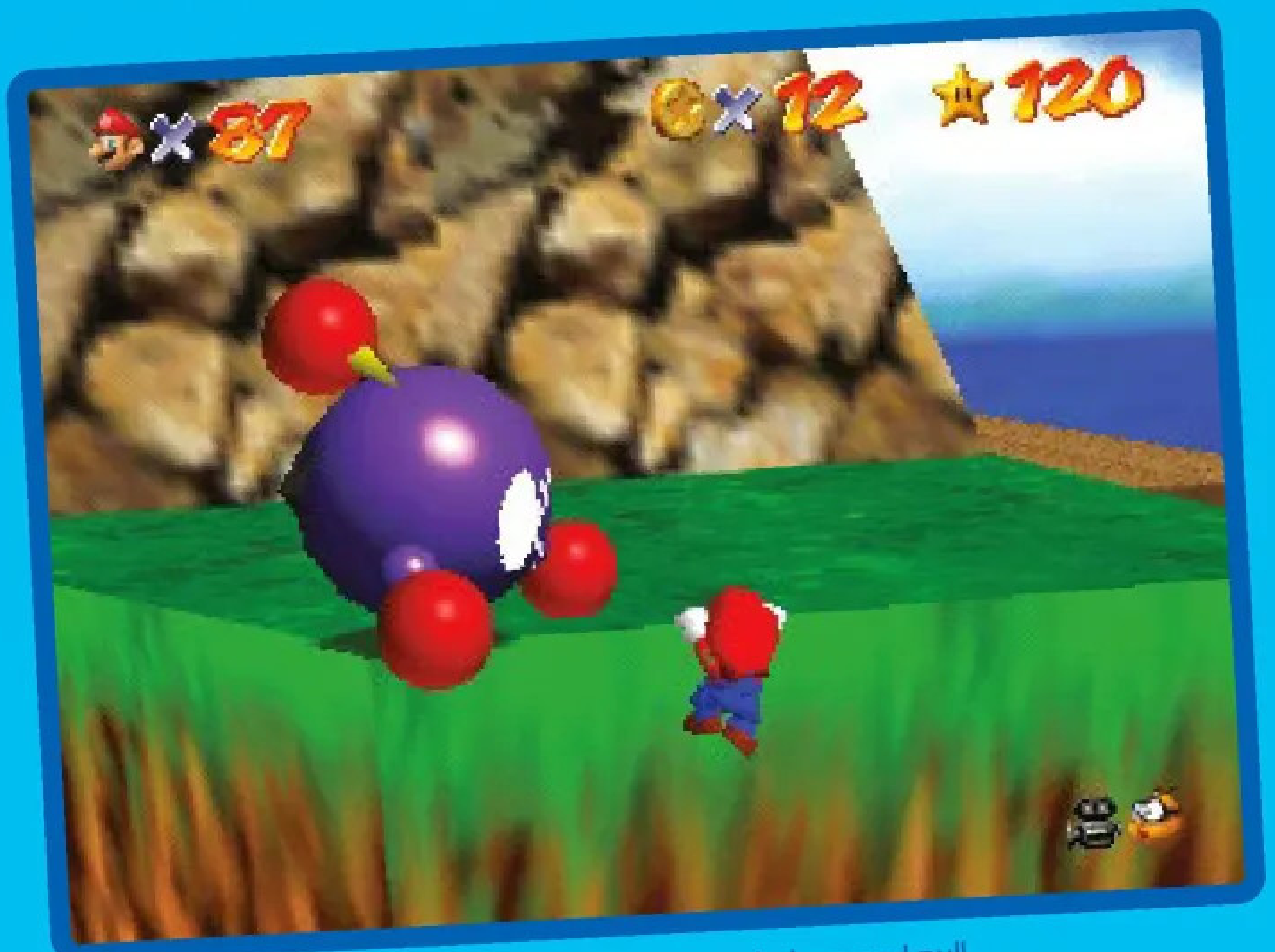
Lastly, *A Hat in Time* has modding support. Players can create their own worlds and missions. We've seen the amazing things people can make in their favourite games, so we want to embrace that fully. The levels can be either simple to design or they can be giant worlds with multiple missions. All these features feel like a natural evolution of *Mario 64*, and we hope everyone will be enjoying *A Hat in Time* when it comes to Windows and Mac in 2017.

Placards at Shoshinkai said that the game was 50 per cent complete, and even described *Super Mario 64* as a temporary title, but that wasn't the impression that attendees took away from the event. On a visual level alone, Nintendo had already produced something stunning. "The game was shown on the show floor – looking finished and playable," says John. "And like nothing else I'd ever seen." Paul was also attending the show, and the game made a similar impression on him. "It sounds incredibly corny, but I couldn't believe my eyes. I was gobsmacked, bowled over."

That initial showing elicited strong emotional reactions from all who saw it. "I was so excited, I tried to impress the hotel staff with my bagful of press materials and transparencies," Paul confesses. "They were not impressed." According to John, other people were feeling something closer to fear, or at the least denial. "I don't know if it's true but I heard a rumour that 'Sony execs' were going around telling people that the game was running on hidden 'workstations'," he recalls. "Hard to believe now but a lot of the technical elements (MIP mapping, filtering, perspective-correct textures, z-buffering, hardware anti-aliasing) were all new to consoles and not present on PlayStation."

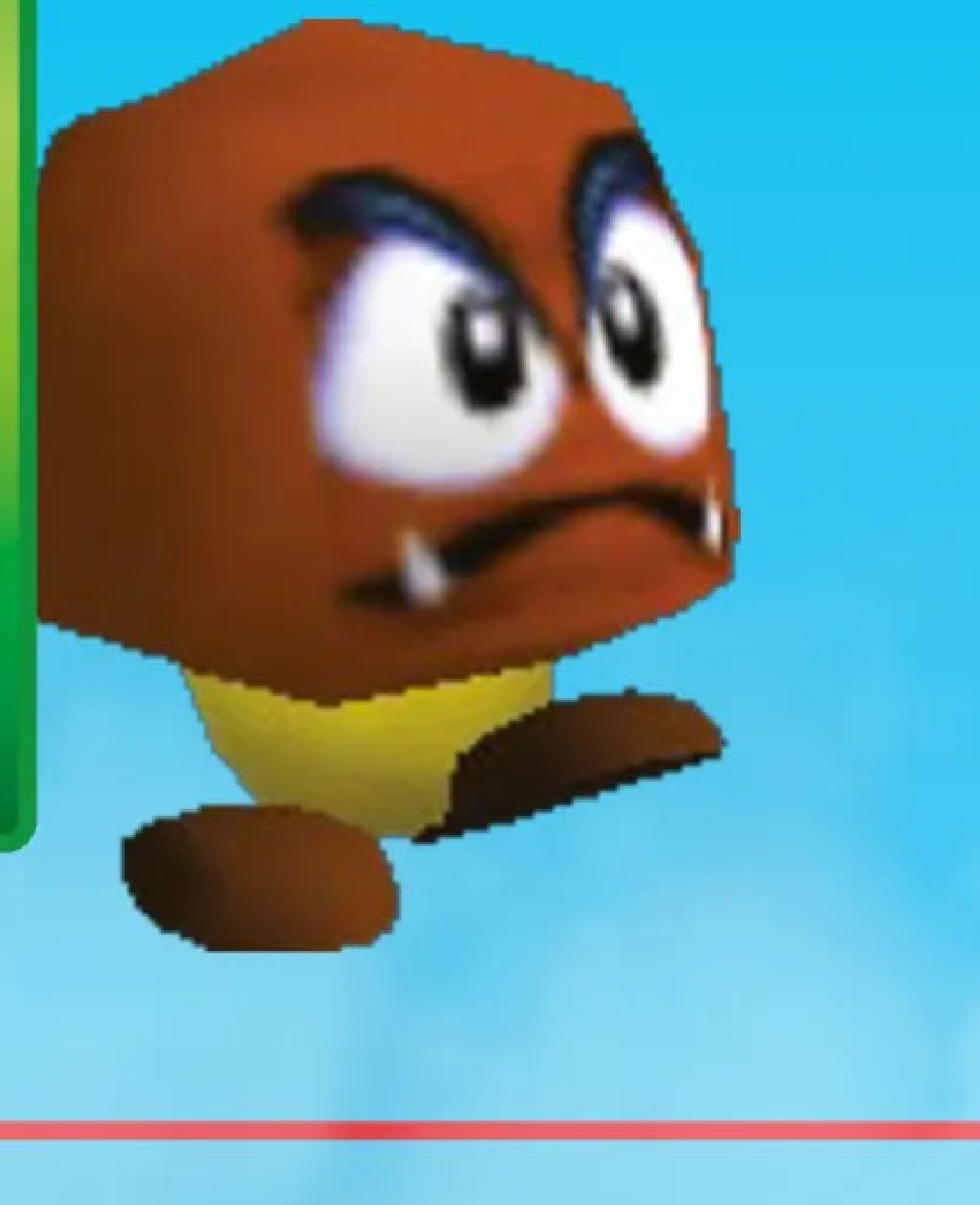
The version of *Super Mario 64* shown at Shoshinkai in November 1995 might not look immediately recognisable to fans – even the familiar entrance hall of the castle is different, lacking the cloud murals and even the central staircase seen in the final game – but that incredible visual polish carried over to the finished game because there was no fabrication or trickery involved. The N64 was perfectly capable of all of those features, and gave *Super Mario 64*'s worlds and characters a feeling of solidity that immediately placed both the game and console ahead of the competition.

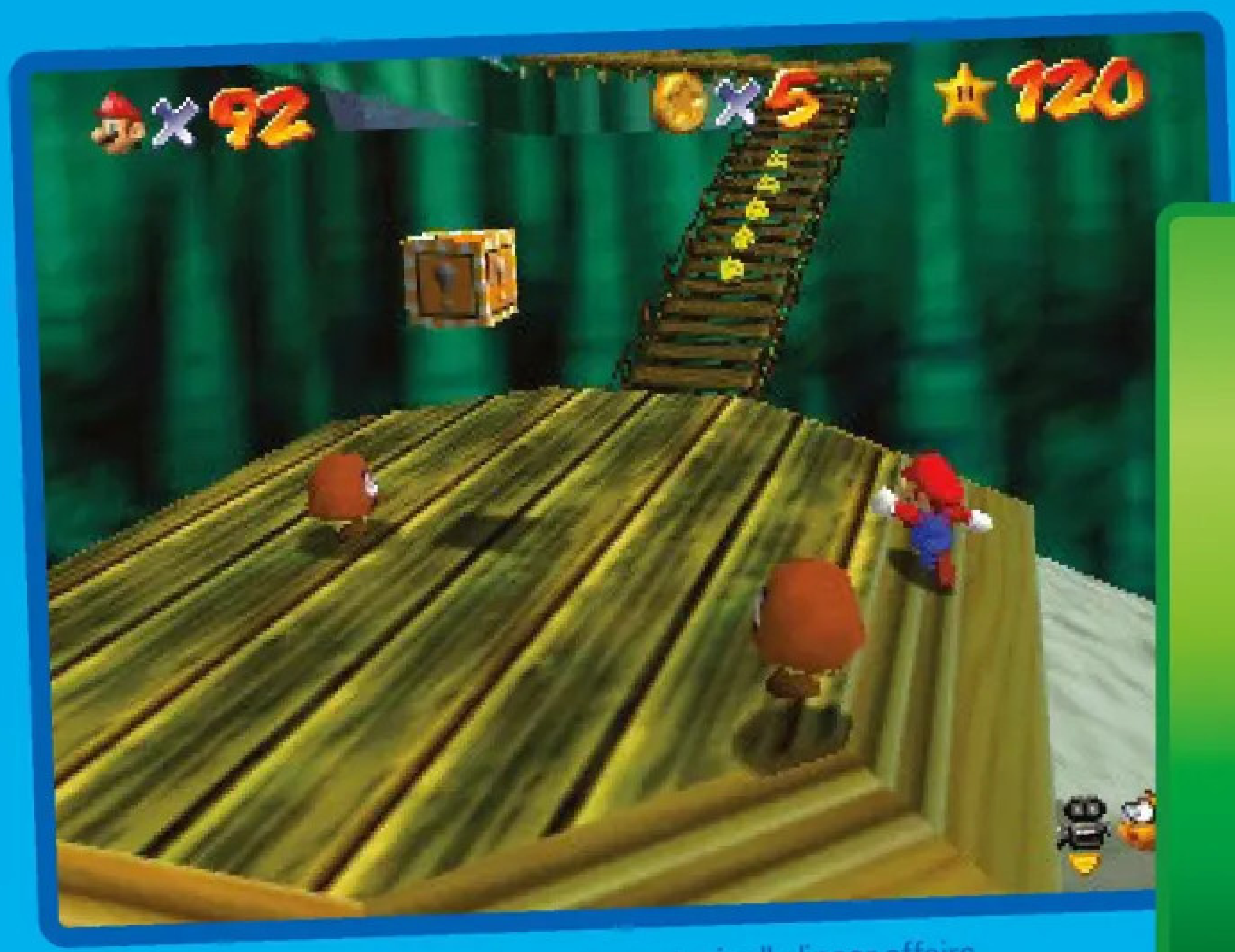
"Everything just worked so incredibly slickly," says Andrew Oliver, then running *Glover* developer



» For the first time ever, Mario could dangle from ledges and pull himself up after a close jump.

» Chris Sutherland was responsible for *Banjo-Kazooie* and also worked on *Yooka-Laylee*.





» Unlike the main stages, boss stages were typically linear affairs with little freedom to explore.

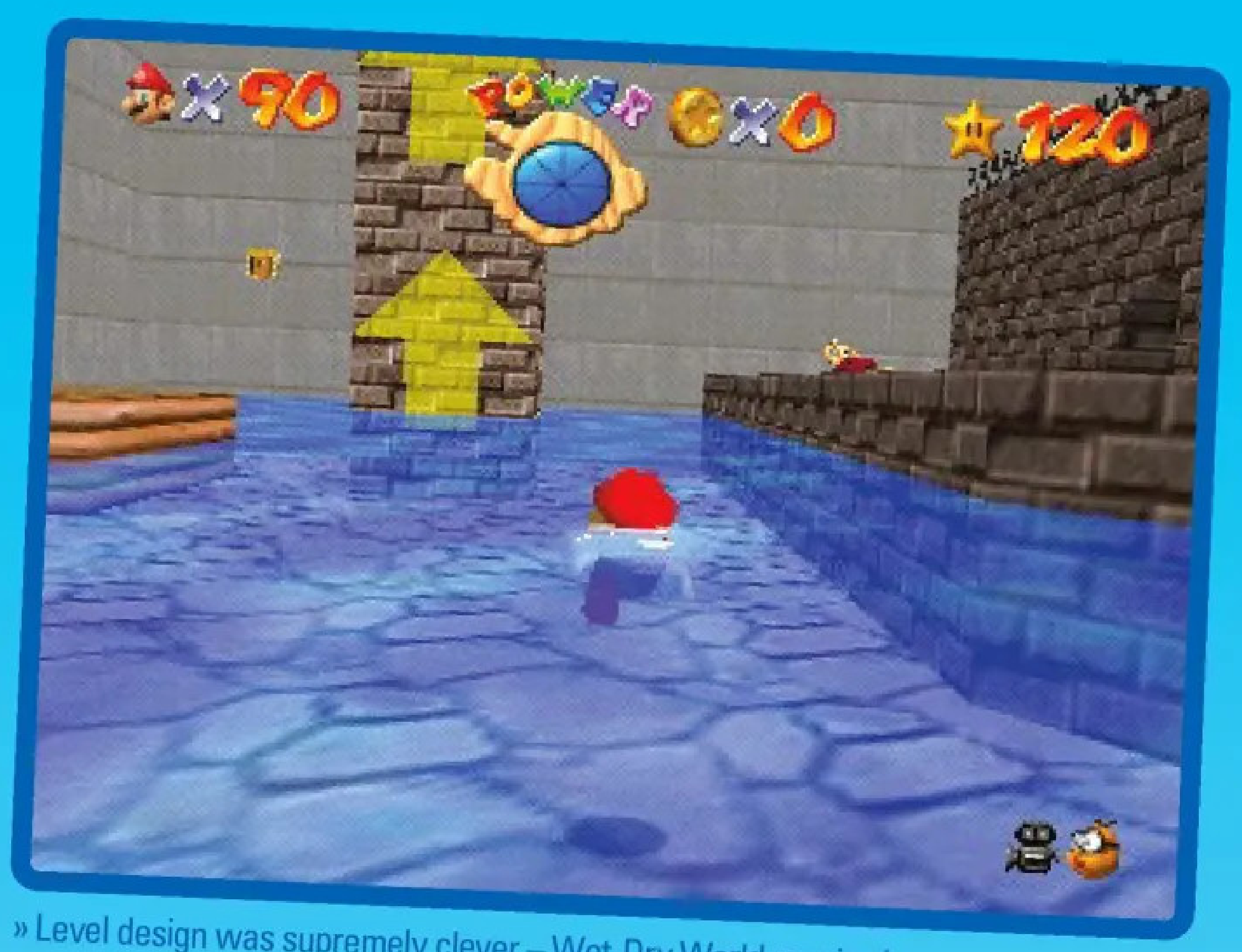
> **"This set the benchmark – anyone releasing a 3D platformer thereafter on N64 was going to be compared with Mario by players!"**
>
> Chris Sutherland

Interactive Studios. "In the 'other camp', we'd been amazed by PlayStation's 3D capabilities. But, whilst Sony pushed all developers to make 3D games, many of us struggled with certain aspects. Cameras were shaky, 3D meshes showed cracks, textures warped and getting a third-person character to feel really nice and for the camera to track it well always seemed just out of reach." Nintendo's game exhibited none of those problems. "*Mario 64* was so professional, no shake, no shudder, or warping or cracking textures. The PlayStation was 32-bit with integer maths and the N64 was 64-bit with floating point maths, so there was good reason it worked so much better."

Mark R Jones, a former artist for Ocean, was similarly taken aback by the leap in 3D quality. "The graphics were jaw-dropping. I'd only really played a few 3D games on the PlayStation and this was a massive improvement," he remembers. "Round things looked round and not like a series of joined up straight lines. The colours were bright and vibrant and, despite many games claiming that playing them was 'like controlling a cartoon', I think that with this game it had really and finally happened for real. I remember everyone at school saying that *Knight Lore* on the Spectrum was like a cartoon back in 1984. But really it wasn't. *Mario* was the real thing. It had actually happened."

The press immediately set the hype train in motion. New images would appear in magazines every month, whipping anticipation up to fever pitch – but it wasn't just the public that was excited. Even developers couldn't wait to get their hands on the game. "Being a fan of the 2D *Mario* series I was fascinated by how they'd brought *Mario* into 3D, what problems they'd encountered and the approaches they took to tackling them," says Chris Sutherland of Playtonic Games. At Rare, then a Nintendo subsidiary, he served as the lead programmer on *Banjo-Kazooie*. "One might have expected the transition to 3D to have been gradual, e.g. Nintendo could have taken a traditional 2D *Mario* course and given it hints of 3D (similar to the *Donkey Kong Country Returns*) but instead they jumped in head first to give the player an immersive world to explore," he continues. "This set the benchmark – anyone releasing a 3D platformer thereafter on N64 was going to be compared with *Mario* by players!"

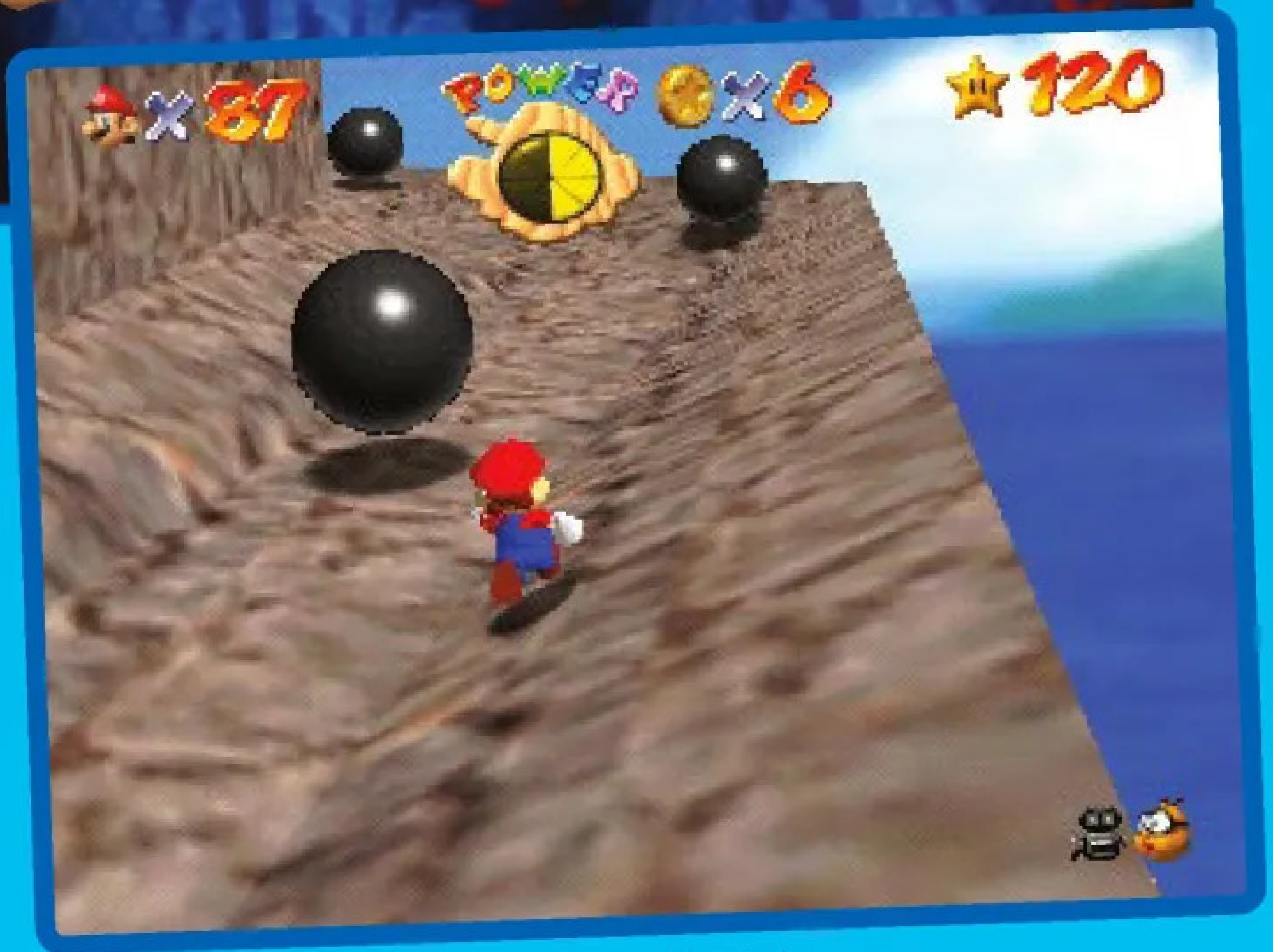
SUPER MARIO 64
START



» Level design was supremely clever – Wet-Dry World required manipulation of water levels to achieve your goals.

Word got around the *Killer Instinct* barn that the new *Mario* game was in the building so we all piled into Chris Tilston's room for a gander," recalls Chris Seavor, another former Rare developer who led the development of *Conker's Bad Fur Day*. "I think this was a little bit before it actually released and it was the Japanese version, so nobody could understand any of the text. Needless to say it was pretty mind-blowing. I'd never seen anything like it before. Then Tim [Stamper] turned up looking rather mortified that we were all seeing this 'super secret' thing and took it away… Still, I'll never forget that moment."

Andrew's first experience with the game was equally memorable. "It was the summer of 1996 at the relatively-new E3 show in Los Angeles – Nintendo had a huge stand with around 30 N64s set up and dedicated to *Mario 64* and people queuing three deep to take turns. Most were running around outside the castle – just enjoying the experience of running Mario around a beautiful cartoon fantasy world. They nailed the feel good controls of a character running around a 3D world. Everyone was beaming – it was a turning point for the industry."

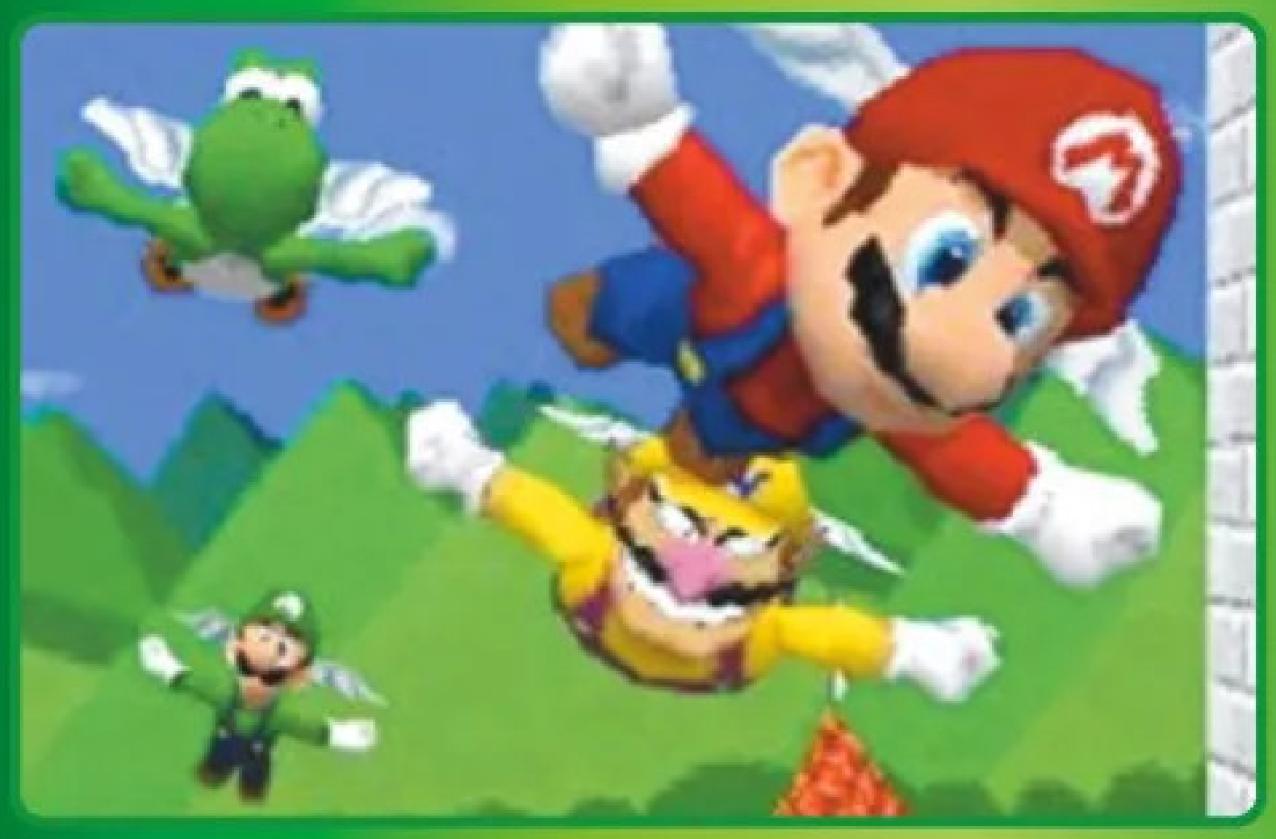


» These rolling balls rolled realistically around banked curves, producing lateral movement that could trip unwary players up.

The importance of solid controls to *Super Mario 64* can't be overstated. "It was the first time I had played a game where messing around with the character's abilities was a lot of fun even with nothing specific ▶

DIFFERENT STROKES

Mario's 3D debut was so good it launched the DS, too. But the DS version was no lazy port – it was a remake with new features…



MORE CHARACTERS

■ In addition to Mario, three extra characters – Yoshi, Wario and Luigi – were made playable, each with slight differences. Luigi's jumps are higher at the cost of handling, for instance, while Yoshi gets a unique hybrid of his *Yoshi's Island* move set and the original *Super Mario 64* one. Collecting caps mid-level lets you switch between them.

NEW ABILITIES

■ Classic *Mario 64* power-ups like the Wing Cap, Vanish Cap and Metal Cap are split among each of the characters, while new powers include mushrooms that can boost character size and damage (like the Mega Mushrooms seen later in the series) and a fire breath move for Yoshi. Several Power Stars are tied to the character-specific abilities.

EXTRA STARS

■ There are 37 additional Power Stars in the DS version, although several original ones were altered or removed for a grand total of 150. Many of the new ones are Switch Stars (which triggered by a switch and must be collected before they vanish). Collecting every Star still allows access to the castle roof via the cannon in the grounds, although Yoshi is no longer there as he's now playable.

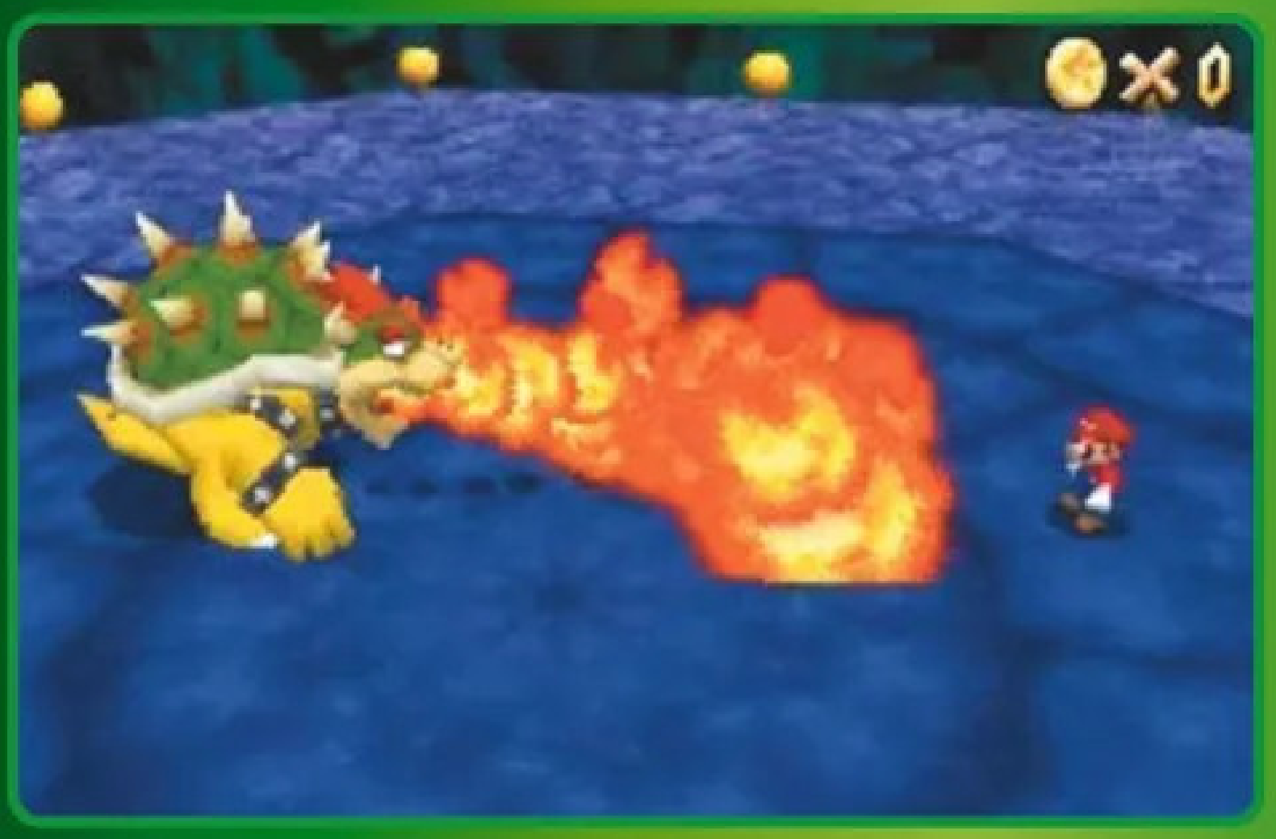
» Rare's Gregg Mayles was the designer for both *Banjo-Kazooie* and *Banjo-Tooie*.

MULTIPLAYER & MINIGAMES

■ VS Mode lets up to four players face off in arenas in an attempt to grab as many Stars and Coins as possible within a time limit. There are also unlockable minigames, which can be earned by catching rabbits in the main game. These are largely simple distractions, all of which are designed to showcase various uses for the handheld's touchscreen.

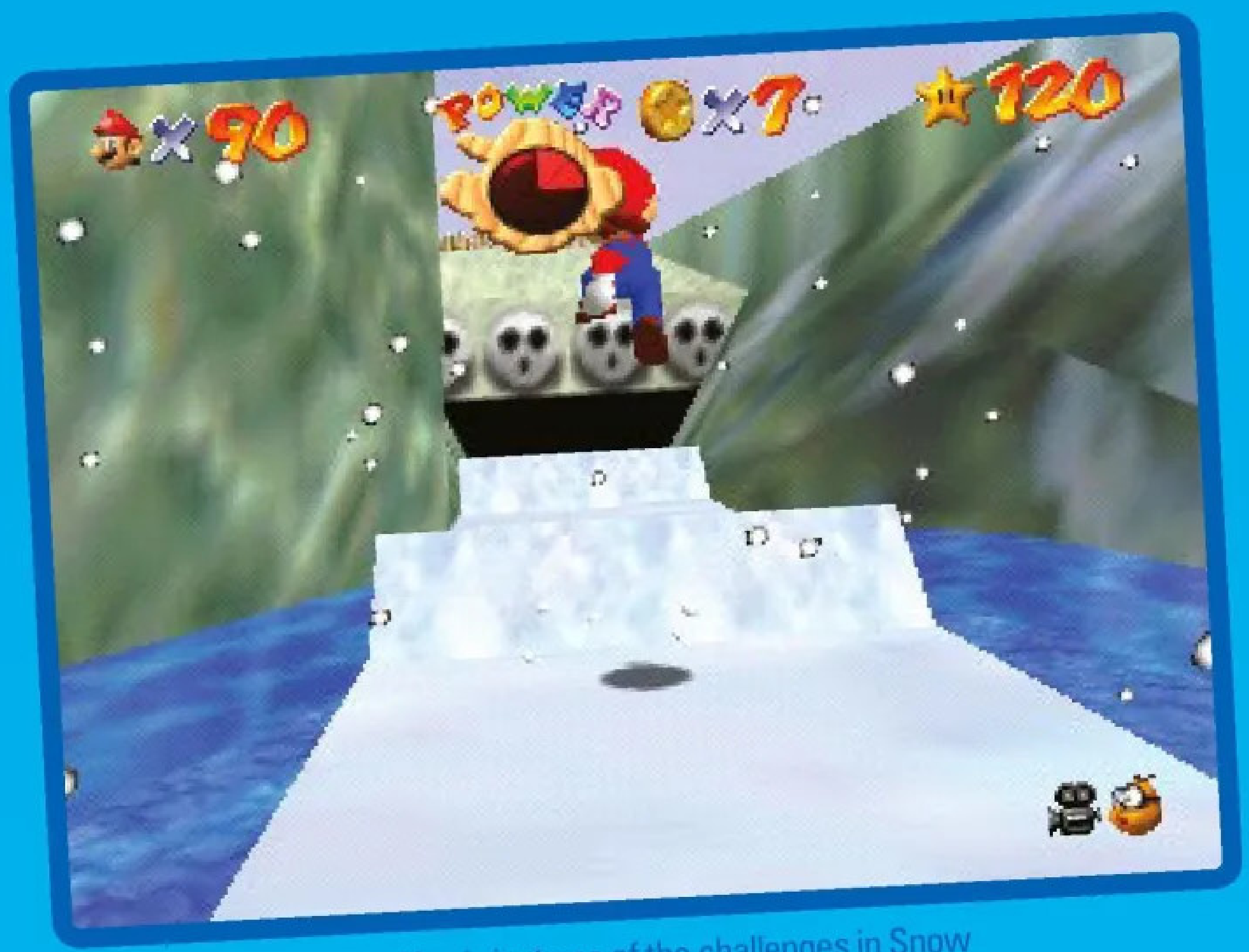
CONTROL OPTIONS

■ Given that the DS didn't have an analogue stick, Nintendo had to get creative with its input methods here. One option is to use digital control with an extra run button, although this lacks precision. The other uses the touchscreen as a virtual analogue stick and, while tricky to get used to, this is the best of the two options once you manage to adjust to it.



IMPROVED GRAPHICS

■ A combination of decent processing power and a smaller screen means that many aspects of the graphics see a marked improvement on DS – Bowser's model in particular is more in line with his modern look, while there are plenty of notable changes (most for the better) over the course of the game. The second screen is also used to display an overhead course map.

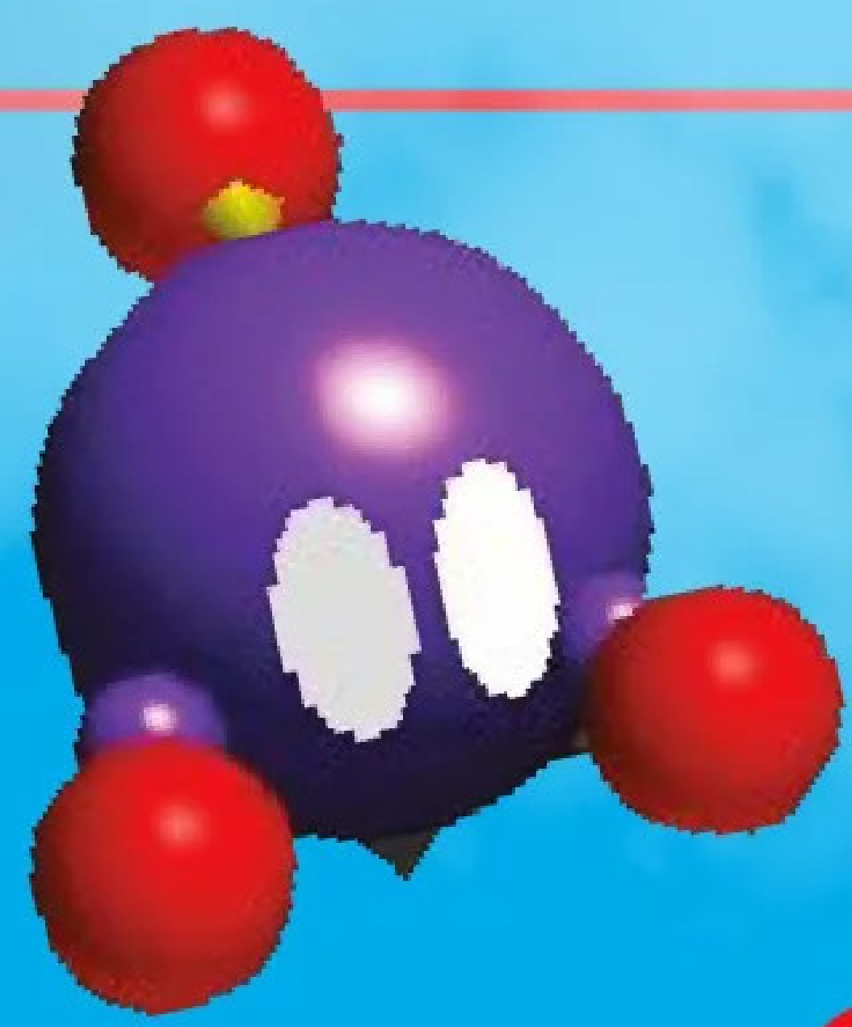


» Jumping over waves of ice is just one of the challenges in Snow Man's Land.

▶ to do," says Gregg Mayles, a Rare developer and *Banjo-Kazooie*'s designer. "It has still not been beaten, in my honest opinion," Chris Seavor adds. "Slick, tight, great animation and totally intuitive. The first attempt at such a control type and they nailed it for the ages." In fact, he found that even the difficult aspects of controlling the portly plumber provided satisfaction. "There was a particular mechanic that took me ages to get to grips with, which involved jumping off a wall, I just couldn't do it. Then one day all my muscles suddenly twigged, and the sheer joy of jumping up and up from wall to wall, in 3D, was a revelation."

Paul's first impression of the game centred on "using the central, solitary analogue stick to help Mario perform backflips and dodge and weave around the first level of the game", and it was the analogue stick that did a lot of the work in making the game feel so good. John explains the appeal well: "The self-centring thumb stick was the first viable analogue joystick I'd come across. Analogue sticks have been around forever but they were always near-enough impossible to use. *Mario* had effortless, expressive, intuitive control of a character in a 3D world," he says. "Back then, it was more or less accepted that 3D platformers don't work. There had been a few noble attempts but they were all difficult and confusing to play. Usually the gameplay was about overcoming the controls and camera restriction," he continues. "*Mario 64* had you running, skipping, backflipping, climbing trees and even flying. Nintendo had done the impossible."

Of course, all of that excellent control would have been for nought if the game didn't provide adequate space to utilise it, and challenges to overcome. Nintendo delivered in both regards. Paul remembers the sense of disbelief in the office at the time. "The art designer of *C&VG* was asking me all these questions, because he doubted that much of what he had heard was true: 'Can I just run onto that bridge and jump into the water? And then I can swim? Under the water?'" For Gregg, the structure was as important as the space. "3D games up to this point felt restricted in where you could go and what you could do, but *Mario 64* removed these restrictions," he explains. "The freedom made the worlds a joy to explore, coupled with an progression system which allowed you to tackle challenges in the order you wanted to." ▶

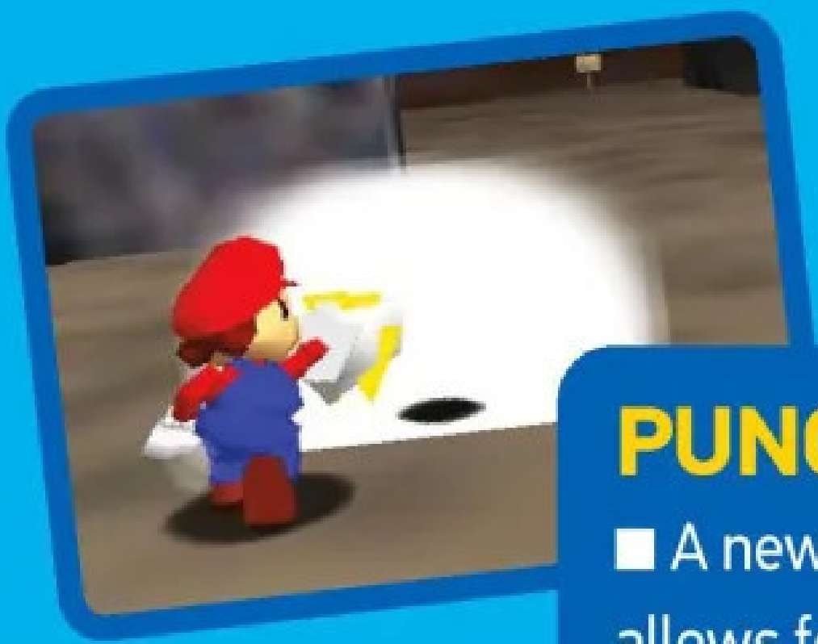


MARIO'S MARVELLOUS MOVES

A closer look at the portly plumber's amazingly agile abilities

MOVEMENT ◎ (Analogue Stick)

■ Full control over Mario's movement speed is an integral aspect of the game, allowing for a degree of freedom and precision that digital control simply can't offer in 3D space.

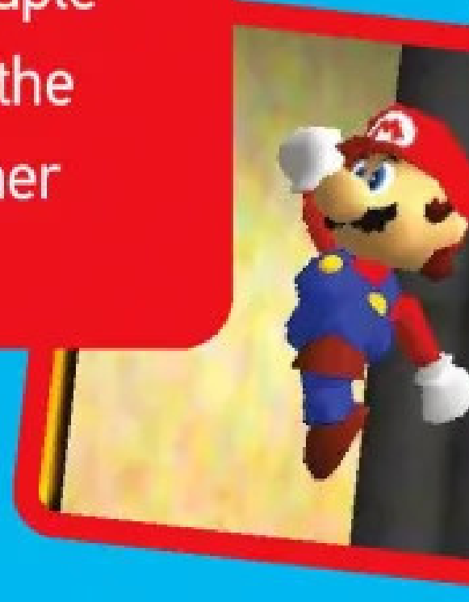


PUNCH B

■ A new addition to Mario's arsenal, this allows for more ways of interacting with the world, whether that be hitting blocks and switches or smacking enemies instead of jumping on them.

JUMP A

■ Perfect for when you don't want to be on the ground any more, Mario's staple move is as versatile as ever here – the longer you hold the button, the higher Mario will jump.



CROUCH Z

■ Where once you would just press down on the D-pad to make Mario crouch, here a bespoke button is needed. Rarely required on its own, but frequently incorporated into advanced techniques.

DOUBLE JUMP A, A

■ Time a second jump for immediately after you land from the first and you'll launch Mario slightly higher, with an audio cue to let you know you've performed this successfully.

KICK B (While jumping)

■ There's more to this move than it seems – it maintains Mario's momentum from whatever he's doing, making it a key ingredient of any speedrun rather than an offensive move.

TRIPLE JUMP A, A, A

■ A third timed leap is also possible, this time giving a much more obvious and useful height boost. With the Wing Cap on, this move will send Mario soaring off into the sky.

DIVE B (While moving)

■ Casual players might not like this move on account of how often it comes out instead of the punch while moving, but experts swear by it for grabbing objects without losing too much momentum.

BACKFLIP Z + A

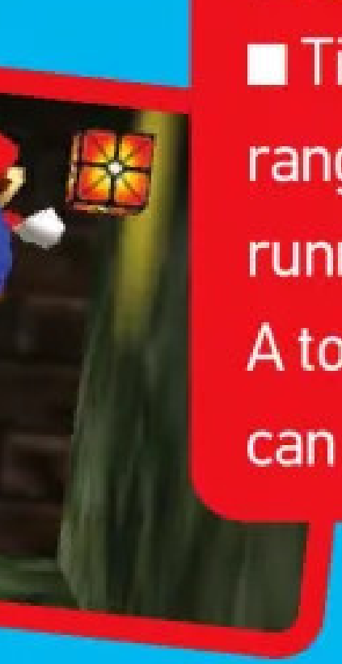
■ Similar to the direction-changing somersault, only performed from a static crouch. Given Mario's general mobility, the somersault is generally considered to be more useful.

SWEEP KICK Z + B

■ Useful for making Mario perform extremely brief breakdancing displays, but not a lot more, sadly. Still, variety is never a bad thing, so bust a move from time to time!

LONG JUMP Z + A (While running)

■ Timing is key to mastering this long-range leap – press and hold Z while running to crouch-slide and quickly press A to send Mario flying. Bold use of this can skip many obstacles and hazards.



CLING (Land near platform edge or slowly walk off ledge)

■ Mario no longer has to fear death from slightly misjudging distance. Fall just short of a ledge and you'll grab the edge and can pull yourself up, sacrificing speed for safety.

SOMERSAULT (Analogue stick away from direction of running) + A

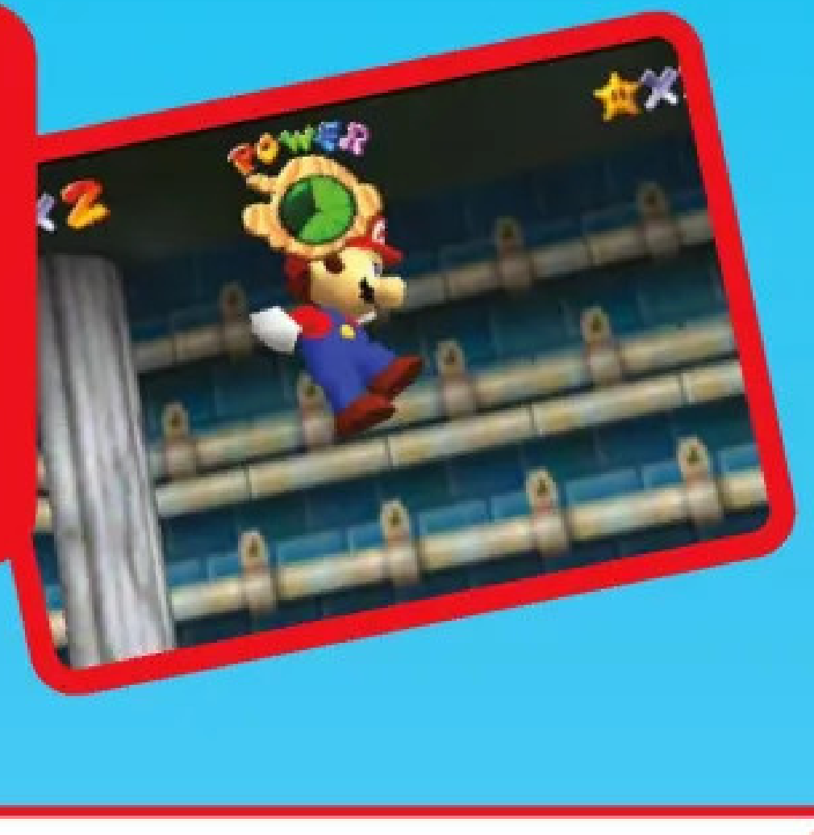
■ Jerk the stick away from the direction of travel and jump to perform a flip that goes much higher than a regular jump – great for quickly getting a vertical boost.

SLIDE KICK Z + B (While running)

■ Performed in the same manner as the long jump, only with B instead of A. This will earn you extra style points, but it's far from an essential part of Mario's repertoire.

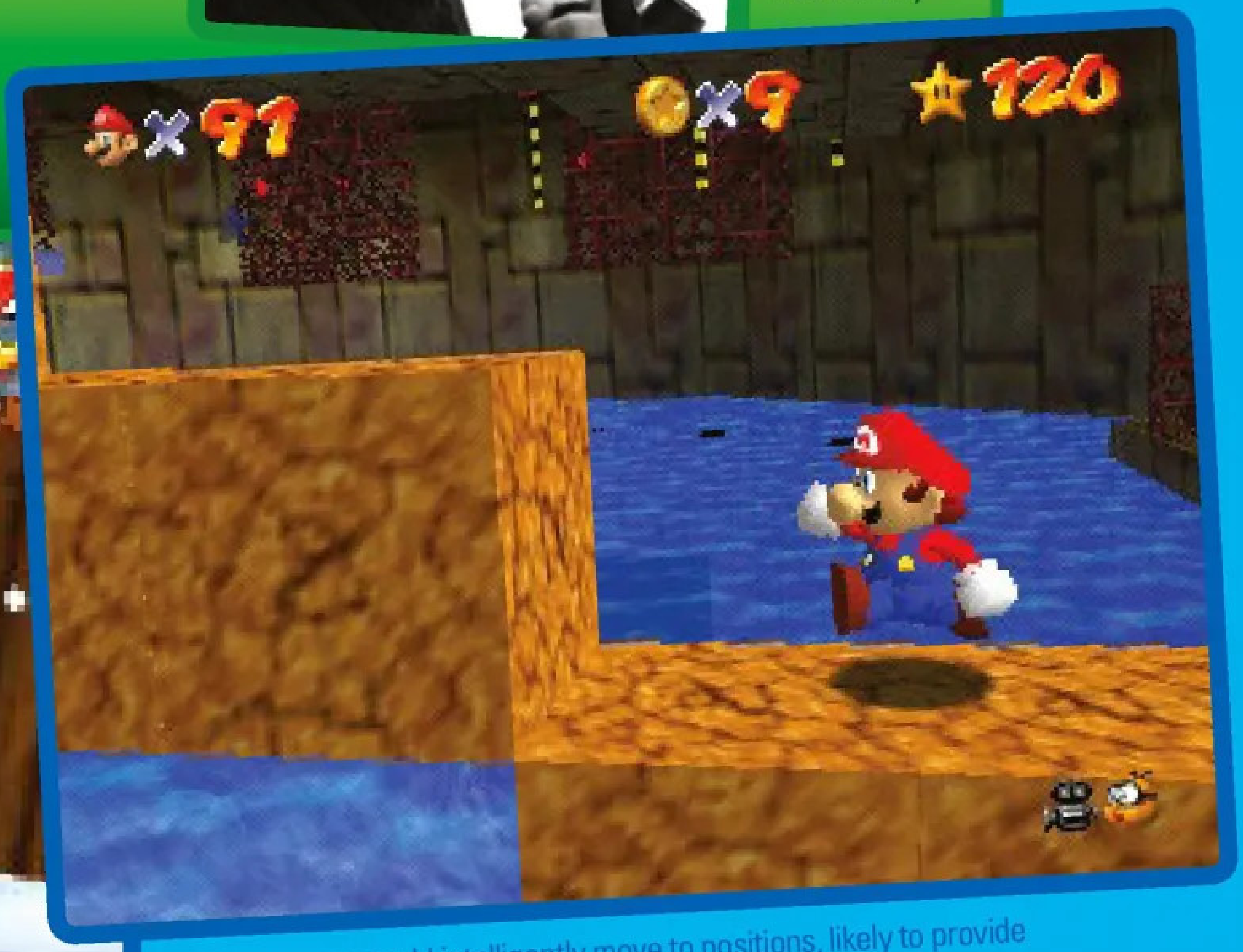
WALL JUMP (Jump at wall, analogue stick away) + A

■ After launching himself directly into a wall, Mario can kick off it to change direction and gain height. Timing and execution are tricky, but mastery allows for some amazing shortcuts.

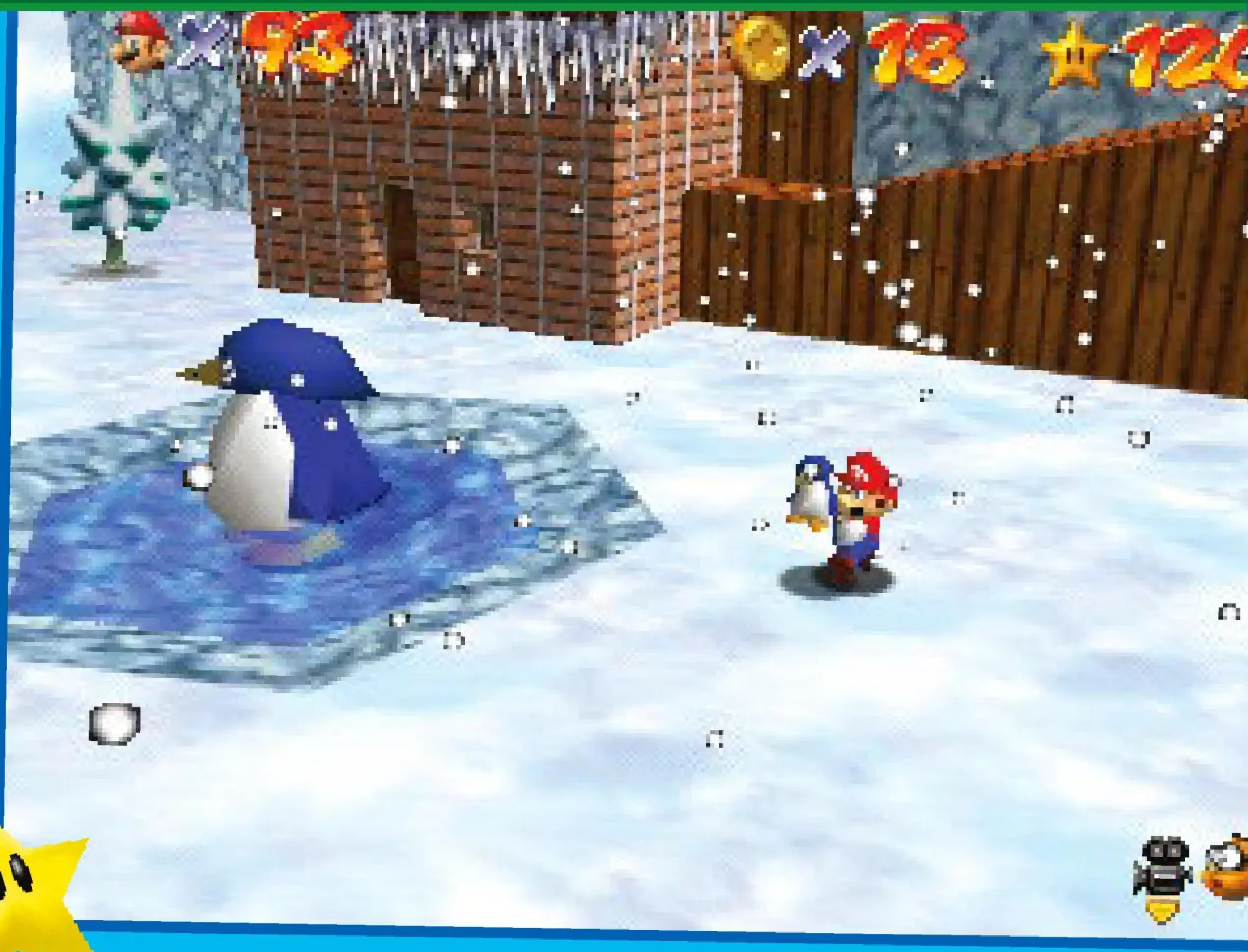


> “With Super Mario 64 being the first of its kind, that became the de facto place to look for inspiration to solutions”
>
> Chris Sutherland

» Chris Seavor was the brains behind *Conker's Bad Fur Day.*



» The camera would intelligently move to positions, likely to provide a helpful perspective.



▶ Instead of the simple ‘reach-the-goal’ gameplay of 2D platform games, each course in *Super Mario 64* offered a selection of challenges, each of which awarded a Star upon completion. They could range from simply locating red coins to defeating bosses, winning races or just difficult platform challenges. Even Peach’s Castle, the hub through which every other level was accessed, held Stars to find. Naturally, every player had their favourite moments. “Cool Cool Mountain was a favourite,” says Gregg. “The way the slide race connected the top of the level to the bottom was really clever and Mario getting stuck head first in snow after a long fall was pure, indulgent charm.”

“My memory is really fuzzy, but when I try to recall anything it’s like looking at my happier moments of childhood,” says Paul as he recounts some personal highlights. “Swinging Bowser by the tail. Finding that bottle underwater somewhere and being convinced that it held a door to a secret zone or something. We thought there would be treats hidden everywhere, and usually there was. Chasing the rabbit, because it was running away so may as well, and being led to something special.” Mark found himself astounded by the longevity of the game. “Even later on, after you’d been playing the game for hours, there were new things to see,” he remembers, “like when Mario turned into liquid metal. You then have this completely metal Mario, like the baddy from *Terminator 2*.”

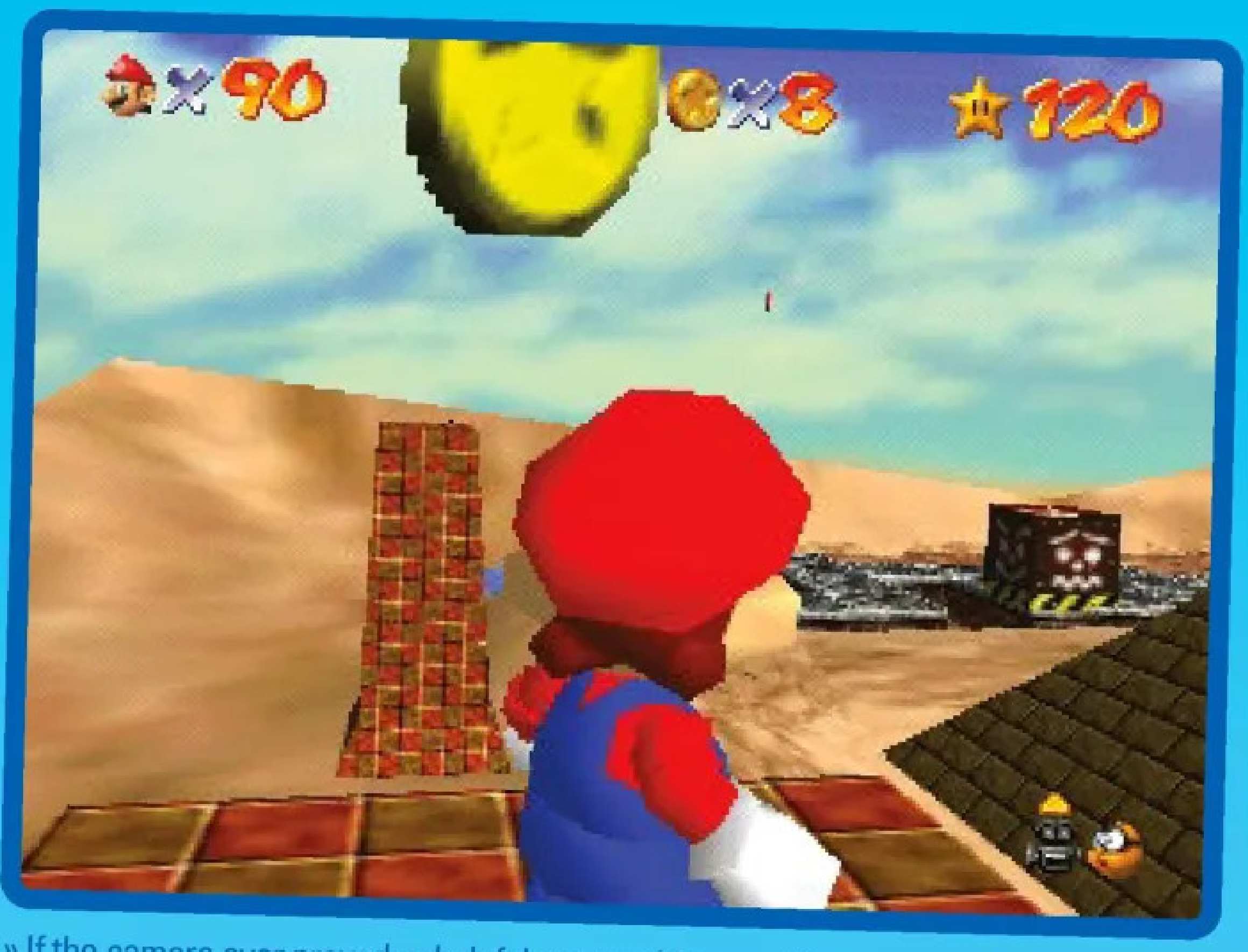
As soon as *Super Mario 64* became available in Japan on 23 June 1996, it began to receive rave reviews from the press. The list of accolades could run for pages, so we’ll cut it down somewhat – 97% from *GamesMaster*, 96% each from *N64* and *Total 64*, 95% in *64 Magazine*. For the first time ever, *Edge* awarded its highest score of 10. Paul Davies called it “the best console game ever” in *Computer & Video Games* and he wasn’t alone in making that claim, as *Maximum* concurred in its final issue. Enormous sales success accompanied the critical acclaim, with over 11 million copies making their way to players.

While *Super Mario 64* served as a source of boundless joy for players, it served as an enormous kick in the rear for developers of other 3D games – Nintendo was way out in front and everyone else was playing catch-up. “Every developer studied that game. Even more than ten years later it was quite common to see programmers boot up *Mario 64* to see how some aspect of the controls or camera systems worked,” says John. “I’d say the first result of that was *Tomb Raider* which clearly benefited from that Shoshinkai 95 showing – particularly with the swimming controls.”

Mark has a similar take on the game’s influence. “It did definitely pave the way for the next generation of 3D platformers. Later games like *Banjo Kazooie* and *Donkey Kong 64*, two of my most favourite N64 titles, wouldn’t have been as good had *Mario* not been as well put together,” he remarks. “You can just see the programmers at Rare having *Super Mario* set up next to their stations looking at it and saying, ‘Right, now we have to do *that* bit better.’ And in a lot of cases, they did. But Mario showed the way forward.”

Mark is dead on the money – the developers at Rare were definitely influenced by the work of what was then their parent company when creating those games. “At the time we [were] experimenting with a ‘2.5D’ look for a platform game that felt like an evolution of the *Donkey Kong Country* games we had created, but after seeing *Mario 64* we knew fully-3D worlds were going to be the future,” Gregg confirms. “In the past if we’ve looked to solve a problem we’d often look to see how other games have tackled similar issues,” Chris Sutherland says. “With *Super Mario 64* being the first of its kind, that became the de facto place to look for inspiration to solutions when we started building 3D platformers on N64.”

However, there were definitely areas in which the *Banjo-Kazooie* team looked to improve upon the *Super Mario 64* experience, and they put a lot of effort into distinguishing their game from Nintendo’s classic. “We wanted to ensure *Banjo-Kazooie* had the Rare feel. I wanted Banjo the bear to have a very solid and predictable feel to his control, as opposed to the higher level of skill required to master the inertia that sometimes made *Mario*’s control challenging,” notes



» If the camera ever proved unhelpful, you could even utilise a Mario’s-perspective camera view.

» Mario's classic animations were transferred flawlessly into 3D, like this jumping motion.

Gregg. "I also wanted our worlds to feel a lot more grounded, basing each one in believable realism that was given a fantastical and humorous twist."

"We wanted to see more visual detail," Chris Sutherland elaborates, "especially as we'd just been producing very detailed prerendered visuals with games like *Donkey Kong Country*. The challenge is to not overwhelm the player with detail – it still needs to be clear what items can be walked on, when a floor is slippy and so on. Likewise, we wanted the architecture/geometry of the worlds to be more complex and interesting – but in doing so, the camera that follows the player needs to become more complex and clever to handle unusual situations and to avoid confusing the player."

Getting the camera right is a task that Gregg remembers vividly. "When I played *Mario 64* I didn't feel the camera was that good, but the reality of just how hard a job this is to get right become apparent when we created our own camera systems," he reminisces. "In hindsight, *Mario*'s camera had the right goals in trying to be as dynamic as possible and mostly got it right. The 3D worlds that we created were even more complex than *Mario*'s and created major headaches for us. Sadly a good camera system is invisible and something nobody talks about, but one that has even minor problems gets a lot of attention."

With Rare more accustomed to 3D game development by the time of *Conker's Bad Fur Day*, ▶

» Metal Mario: he's heavy, but pretty unlikely to try to murder John Connor.

PLUMBING THE DEPTHS

Pushing Mario 64 in ways you wouldn't believe

As one of most-played games on the speedrun circuit, *Super Mario 64* has been pushed to the limits since its release. Countless bugs, glitches and quirks have been discovered in that time, some of which help towards the goal of getting completion times down, while others actively go against that concept. On the former front, various skips have been found that avoid triggering instances of text or brief cutscenes, each shaving valuable seconds off times. Far more noticeable, though, are the effects of the more significant glitches, most of which involve performing a backwards long jump (or BLJ for short) or some variant thereon. These can be used to skip the Star Doors that would otherwise gate access to the Bowser encounters, as well as the 'infinite staircase' that leads to the final level and showdown, making it possible to clear the game with far fewer than the 70 Stars usually required – the minimum was thought to be one (Board Bowser's Sub in Dire, Dire Docks) for a good while until an even more complex version of the BLJ trick was found that let that stage be skipped as well, opening the door to 0-Star runs (and ironically doing so without opening the door). These tricks allow for the credits to be reached in just a little over five minutes, while various categories exist for players who would still chase world record pace without having to use said tricks to do so.

At the other end of the spectrum lies the work of YouTuber pannenkoek2012, whose channel is filled with literally hundreds of videos in which he does everything from collecting every possible coin in each level to showcasing various glitches and oddities in the game that you won't see in a more refined speedrun where they would literally only cost time. More recently, however, he has found fame for a series of videos in which he attempts to collect many of the game's Stars in as few presses of the A button as is possible. These challenge runs, while interesting, only really started to garner attention in the last year or so, with commentated versions of several videos going so deep into the science of how each run works as to turn glitch mastery into an art form. In these videos (which are incredible, it must be said), you'll see how every stage exists on a near-infinite grid of so-called 'parallel universes', which have collision but no geometry; you'll hear terms like 'QPU Alignment', 'Syncing Speed', 'Half A-Press' and 'Held Object's Last Position' used in explaining feats of extreme mechanical manipulation; you'll discover just how long Mario needs to run on the spot in certain locations to build up enough speed to perform some of these crazy glitches (spoilers: it's *12 hours*).

» *Super Mario 64* is the most popular game on speedrun.com, with over 1,000 runners across a bunch of categories.

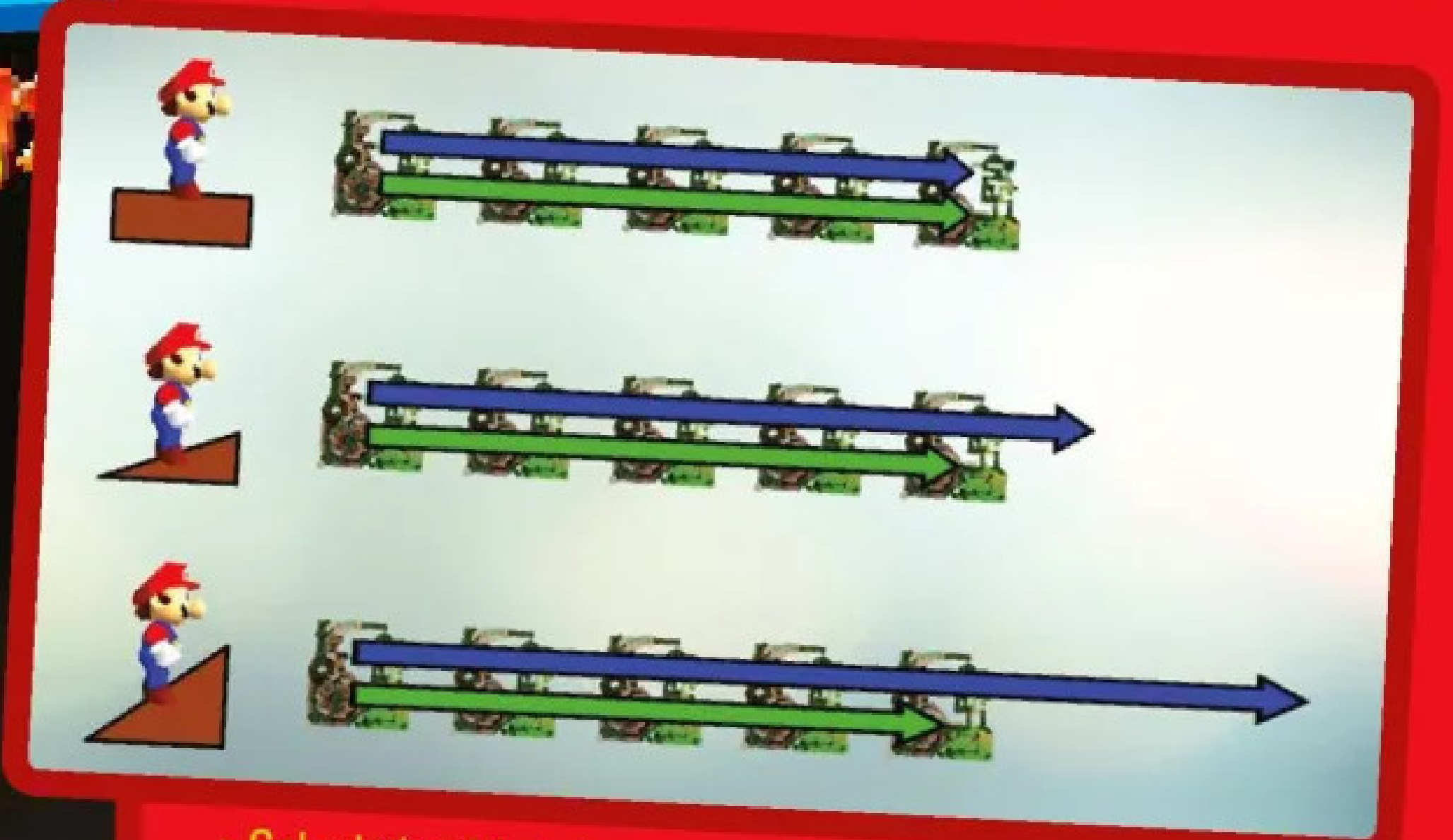
Many of us reflect on *Super Mario 64* as an incredible highlight of our gaming lives – an amazing introduction to 3D gaming that set the stage for much of what came after. But for others, it's an obsession. And whether that means treating it like a race or like an in-depth science experiment, the fact that players are still discovering new things about this game two decades after release is nothing short of incredible.

Further Reading:

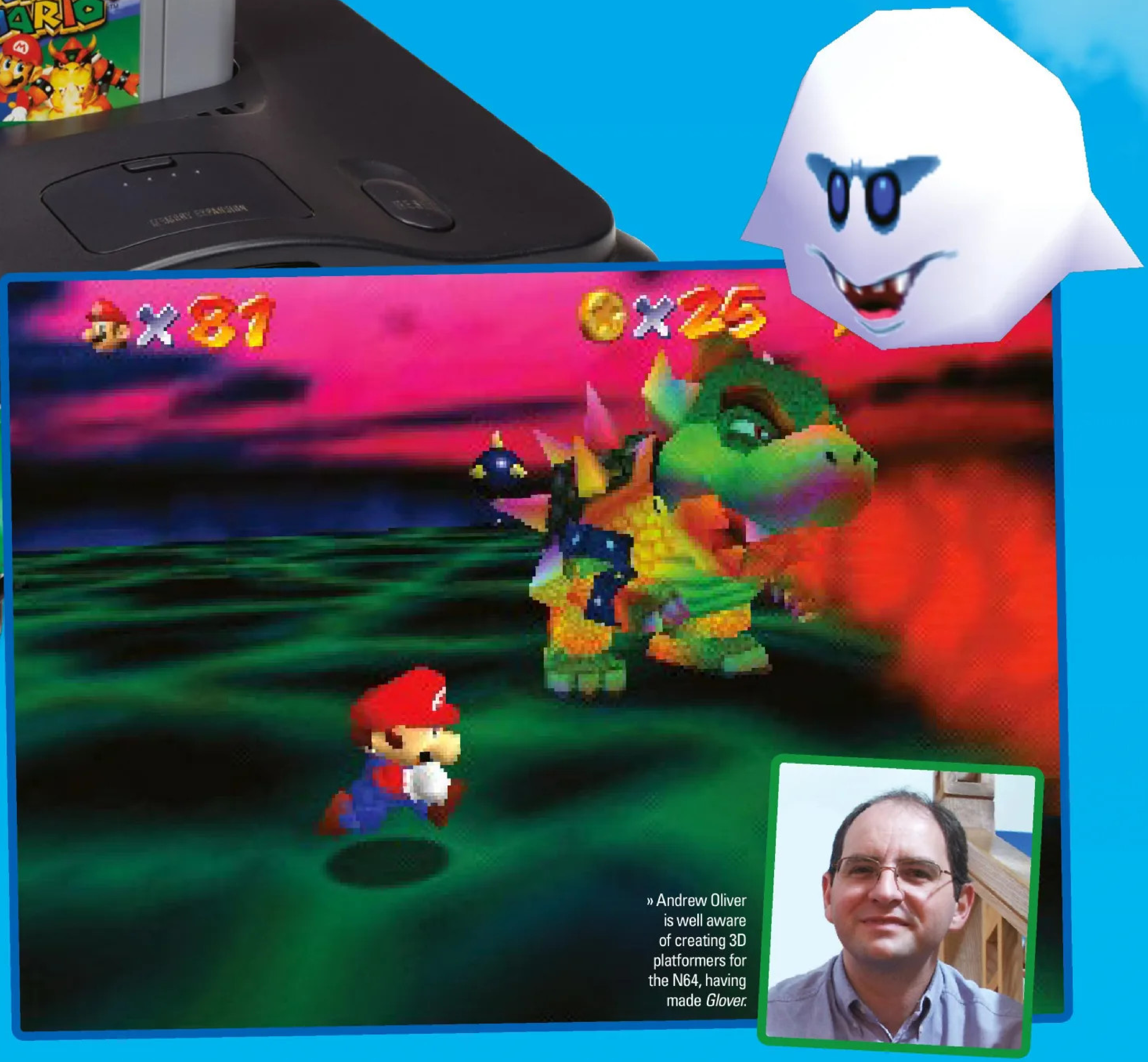
speedrun.com/sm64 - The fastest runs of the game – 70-Star and 120-Star runs are pure skill exhibitions, while lower categories combine this with glitch exhibitions.

tasvideos.org/SM64TASHistory - Tool-assisted videos that show optimal routing and the evolution of glitch-led runs, from the first 16-Star run back in 2005 to the effectively perfect run recorded in 2012.

youtube.com/pannenkoek2012 - pannenkoek's YouTube channel, which goes into insane depth on just how far *Super Mario 64*'s mechanics can be twisted and broken.



» Calculating Mario's speed based on terrain is an integral part of successfully visiting parallel universes.



» Andrew Oliver is well aware of creating 3D platformers for the N64, having made *Glover*.

many of those initial technical challenges were less of a problem. Still, it was a game which tried to top *Super Mario 64* in certain areas, and Chris Seavor pulls no punches in pointing them out. "The visuals… let's be honest, *Mario 64* had some ugly-looking assets in there," he notes, and it's fair to say that *Conker* came out ahead in this regard thanks to Rare's knowledge of the N64's hardware, and particularly its texturing quirks. The structure of the game was tweaked too. "We also added more of a narrative to the world, driving the player forward not so much to get the next Star, but to see where the stories and characters lead you."

Still, Gregg is under no illusions as to how difficult it was to compete with such a groundbreaking game. "*Mario 64* got so many things right that it was hard for following games to make significant improvements," he opines. "Other games had more impressive visuals, used the performance of the hardware better and created worlds that had more depth, but few got close to matching things like *Mario*'s control."

Over at Interactive Studios, the *Glover* team was discovering the same thing. "*Mario* set a high bar of quality to meet," says Andrew. "We were prototyping *Glover*, first on PC and then on an N64 dev kit, and we were getting great results that we were very happy with. But suddenly, we were playing a huge game that had solved a few problems more elegantly that we had. For example, it had smoothed-skinned characters, unlike the hinged, segmented 3D characters that PlayStation and *Glover* had! We decided we had to ensure our characters looked just as smooth and had to work out how to make an animated skinned character renderer." That wasn't the only innovation that Andrew and the *Glover* team had to compete with. "We just spent ages trying to work out what the logic was for the camera so we could get somewhere close," he remarks. "Technically we figured out most things, as *Glover* demonstrates, but *Mario* was still obviously a better game."

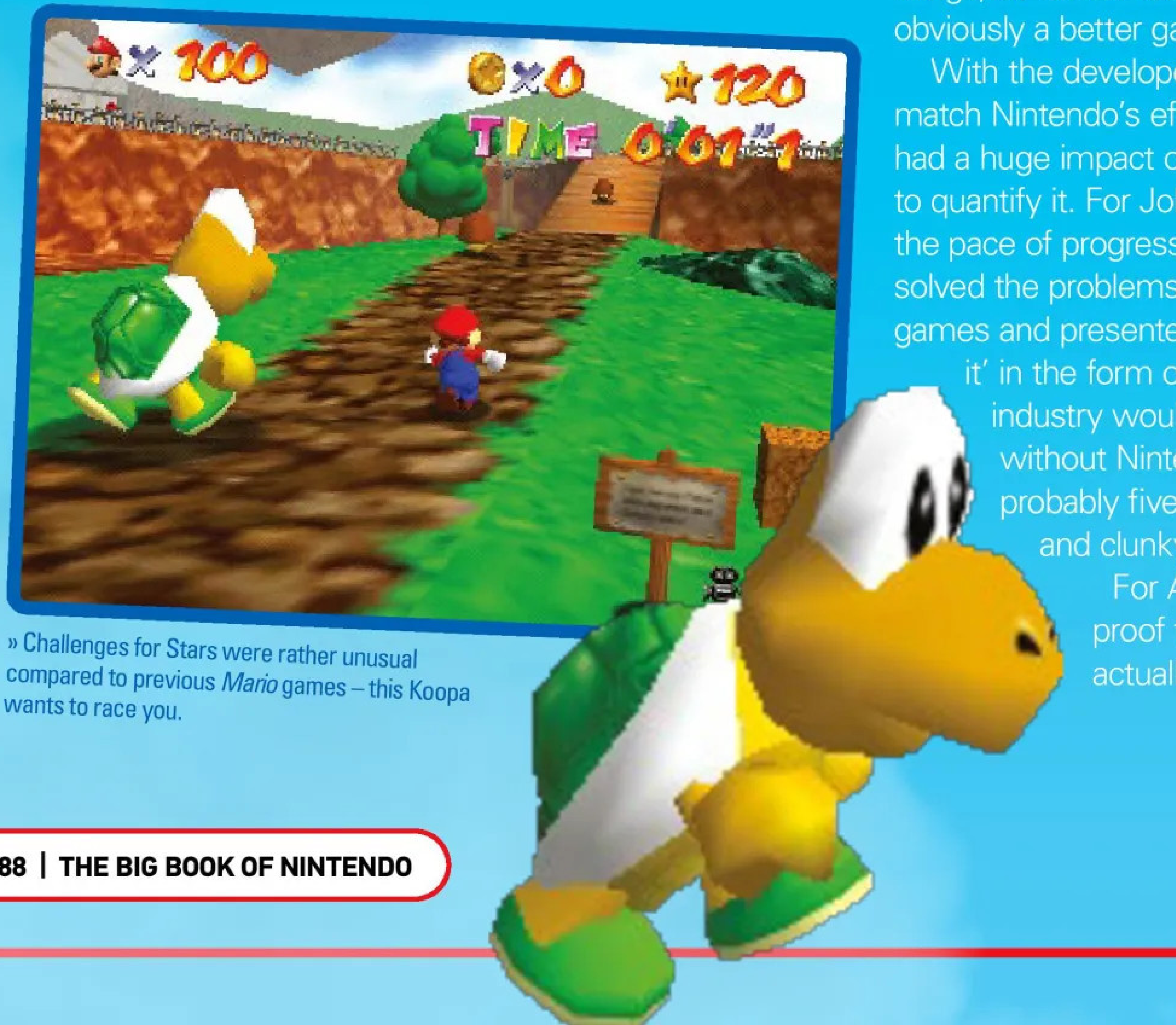
> **"Mario 64 got so many things right that it was hard for following games to make significant improvements"**
> Gregg Mayles

With the developers telling us how far they went to match Nintendo's effort, it's clear that *Super Mario 64* had a huge impact on videogames, so we asked them to quantify it. For John, it was a game that accelerated the pace of progress in game development. "Nintendo solved the problems of third-person control in 3D video games and presented the industry with a 'how to do it' in the form of *Mario 64*," he says. "I think the industry would have figured it out eventually without Nintendo's help but *Mario 64* saved us probably five years worth of failed experiments and clunky controls."

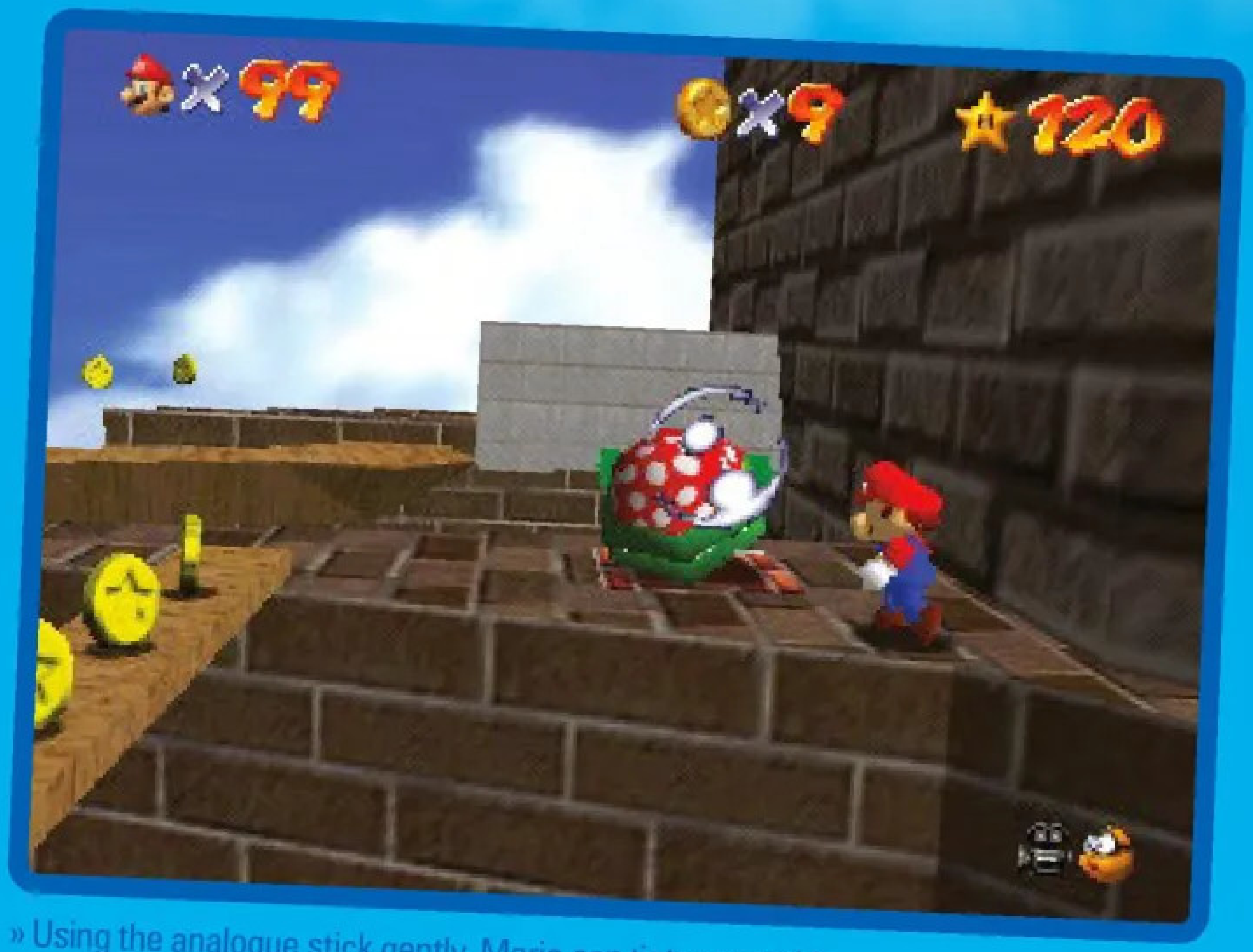
For Andrew, it was nothing less than proof that polygon technology was actually viable. "It made everyone realise that 3D was the future, and not just of driving games, but all games! It looked so good, and gave some personality to the characters," he says. "The worlds were big and interesting and it immersed players in a deep and beautiful fantasy world. Over on the PlayStation, it still felt that 3D was struggling and whilst technically impressive, the gameplay or graphics were generally suffering for the 3D experience. *Mario 64* showed the way forward for the whole industry!"

"It was the first of its kind and a genuine 'Wow Moment' in gaming that excited even the most jaded of people. It was a combination of revolution combined with one of the most prominent and successful series of games," says Gregg, summarising the legacy of the game. However, he also adds a important point: "It's also stood the test of time. Play *Mario 64* today and it's still got the ability to transform you into a playful child where just doing things without thought is great fun."

That's the key thing to remember about *Mario 64*. It was undoubtedly a groundbreaking and technologically-impressive game, as the developers we've spoken to have testified. Time marches on though, and other games have entered the conversation as points of reference for 3D game design. If *Super Mario 64* had just been a technical achievement, we'd remember it as an important release. But *Super Mario 64* was always a supremely enjoyable game first and foremost – and the decades that have passed since it released haven't dulled that in the slightest.



» Challenges for Stars were rather unusual compared to previous *Mario* games – this Koopa wants to race you.

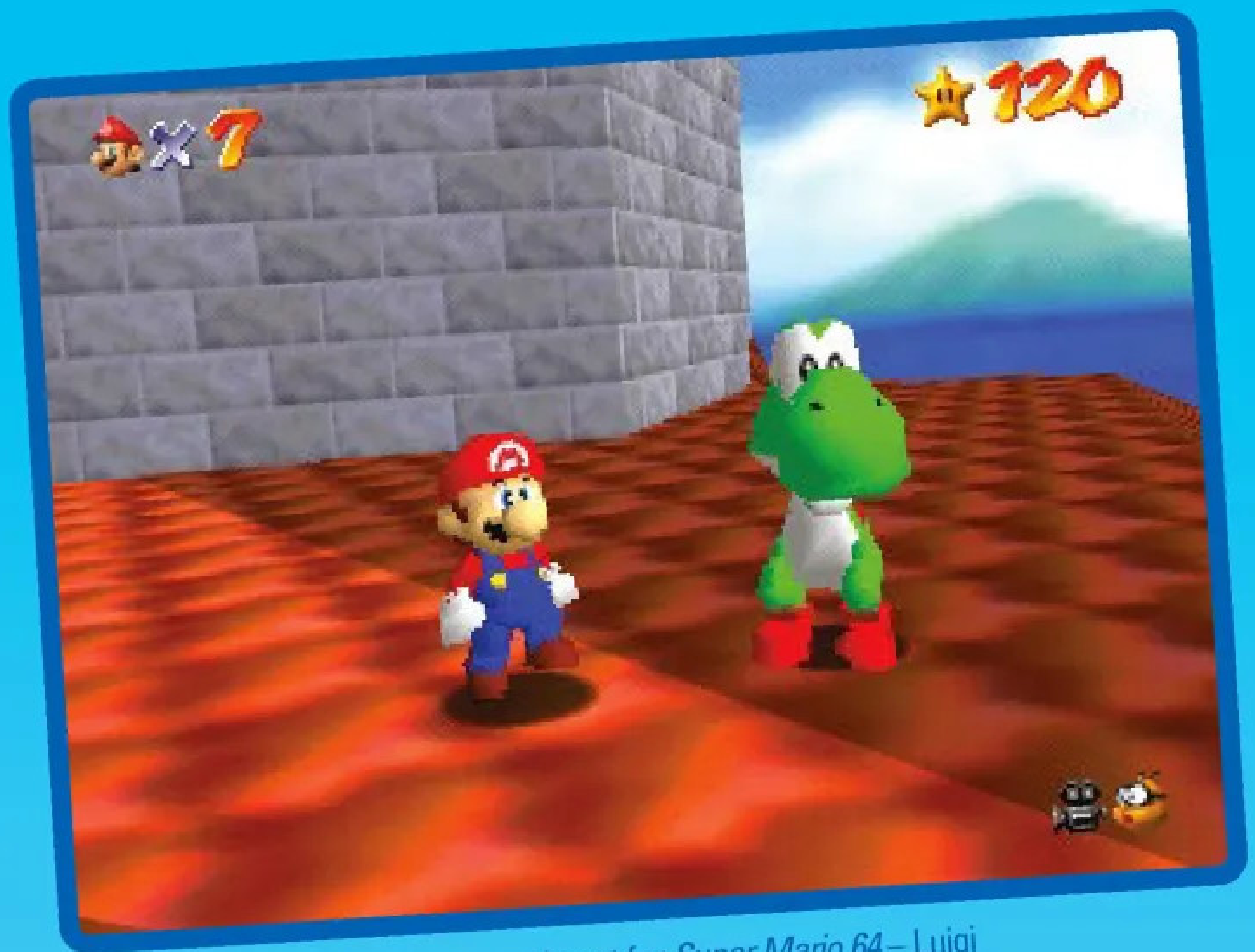


» Using the analogue stick gently, Mario can tiptoe past this sleeping enemy without waking it.

There were years when I didn't play it and when I got back into retro games I worried that it might not have aged well and I was hesitant to have another go at it," Mark confesses. "But I can happily report that even now, with the novelty of the graphics having worn off, *Mario 64* is still one of the best and most fun games to play on any machine *ever*!" He's in no doubt as to why that is, too. "Nintendo didn't just rely on the graphics to wow everyone, they also concentrated on the puzzles and gameplay. So they still spent as much time on the gameplay as they had done on the previous *Mario* titles but had added in this huge world that seemingly burst out of this little bit of plastic you just stuck in the top of your machine before you turned it on."

That's why *Super Mario 64* is still as relevant today as it has ever been. The kids who grew up with N64s are adults now, and their love for the game and its successors is the reason behind the success of crowdfunding campaigns for traditional 3D platformer revivals, including *A Hat In Time* and Playtonic's *Yooka-Laylee*. *Super Mario 64*'s supreme gameplay is the reason that people are still playing today, years after most people nabbed that last Star and had a chat with Yoshi on top of the castle. People simply aren't tired of the game – and if you needed any proof of that, hop online and look at the abundance of *Super Mario 64* speedruns, challenge runs and modified versions.

But don't take our word for it. Dig out a copy of *Super Mario 64* and start up a new file. Spend a minute or two pottering around the castle to get a feel for how Mario controls before leaping into Bob-Omb Battlefield. We'd be surprised if those few minutes don't turn into hours – and years later, developers are still trying to make games that are so compelling. *



» Most of the extended cast was absent for *Super Mario 64* – Luigi doesn't appear, and Yoshi only has a cameo.

LEAPS OF FAITH

Five games that made the jump to 3D in style…

METROID PRIME 2002

■ Many wondered how the exploration of *Metroid* could ever work in 3D, but Retro Studios came through with the perfect answer. Encapsulating *Metroid*'s sense of isolation and freedom, while being a showcase for the GameCube, it's one of the greatest examples of 2D-to-3D done right.

THE LEGEND OF ZELDA: OCARINA OF TIME 1998

■ Just as it had done with *Super Mario 64*, Nintendo embraced the third dimension when updating *Zelda* for a new generation. The game was imbued with a very real sense of verticality that helped make it absolutely jaw-dropping.

GRAND THEFT AUTO III 2001

■ Alongside *Super Mario 64* and *Ocarina Of Time*, *GTA III* was instrumental in establishing the template for modern 3D games, especially open world titles. Minimal prelaunch fanfare only made its impact all the more incredible and it had a real sense of place and personality.

NAME
BARRIER
HP
MP
LIMIT
TIME
Cloud
Vincent
Cid
1760/1969 185
1490/1490 266
1824/1824 241

FINAL FANTASY VII 1997

■ A curious case study, as the move to 3D graphics actually had little impact on the gameplay formula. It did, however, allow for impressive cutscenes and a more cinematic feel – two things that both tied in beautifully to the greater storage capacity CDs had over cartridges.

METAL GEAR SOLID 1998

■ As with *FFVII*, the polygons of *MGS* allowed for a then-unprecedented level of cinematic presentation. Kojima and his team took this concept and ran with it, too – Snake's PlayStation sneaking mission is widely accepted to be the birthplace of modern cinematic gaming.

…and five that stumbled and fell into the depths of infamy

FADE TO BLACK 1995

■ Many would argue that *Flashback* never needed a sequel, and this oddity serves as evidence for the truth of that statement. Crude 3D visuals were a far cry from the mind-blowing original, it's redeemed somewhat by its decent character animation.

BUBSY 3D 1996

■ Famously one of the worst games ever made, this took the unlikable *Sonic* rip-off, dumped him into an ugly 3D world that looked to be made out of placeholder assets and left it at that. Random deaths and horrendous pop-in abound in this abhorrent waste of time and money.

EARTHWORM JIM 3D 1999

■ Handing the reins to an untested developer for something so difficult as making the jump from 2D to full 3D doesn't sound like the best of plans, as this effort proves. Bland environments were a departure from the colourful backdrops of the original and the camera had a mind of its own.

CASTLEVANIA 64 1999

■ One of the reasons people thought *Metroid* could never work in 3D was that *Castlevania* struggled to transition. Camera once again proved to be fatally flawed in early attempts at 3D vampire hunting, at odds with the pinpoint precision for which the series was known.

PRINCE OF PERSIA 3D 1999

■ While this 3D debut wasn't as dreadful as some efforts, its poor control and awkward animations were just made to look even worse thanks to how impressive these aspects had been in the original game. The camera was also horrible – a standard pitfall of 3D gaming.

Game Boy Color

» MANUFACTURER: Nintendo **» YEAR:** 1998
» COST: £69.99 (launch), £50+ (today, boxed), £25+ (today, unboxed)

Nine years into its life, the Game Boy was the undisputed king of handhelds – but it was also looking a little long in the tooth, especially as the technology wasn't exactly cutting edge in 1989. As a result, Nintendo issued a modest upgrade to the existing hardware to extend the life of the range. The Game Boy Color was backwards compatible with its predecessors, and cosmetically similar to them, too – a little larger than the Game Boy Pocket, with a bulging back to accommodate the battery compartment. The machine came in a variety of colours to highlight its key selling point, a non-backlit colour display.

The choice of display meant that Nintendo was able to retain the long battery life that players expected, while offering an upgrade with tangible benefits. To cope with the extra workload and allow for more sophisticated games, Nintendo upgraded the CPU speed and added extra RAM, though developers could opt to avoid these in order to make their games compatible with older black-and-white hardware. An infrared port was also added for short-term communication features, though it was rarely used. The system was a roaring success, and its short-notice announcement wrong-footed Bandai and SNK, both of which were preparing monochrome competitors. ✱

COMM
POWER
2450
x00
347
GAME BO

GAME BOY COLOR
Nintendo
B
A
SELECT
START

Game Boy Color fact

■ Some original Game Boy games have special custom palettes when used with a Game Boy Color. Examples include *Metroid II: Return Of Samus*, *Donkey Kong*, *Space Invaders* and *Kirby's Dream Land*.

PROCESSOR: 8-BIT SHARP LR35902 (UP TO 8.38MHZ)

POWER: 2XAA BATTERIES, APPROX TEN HOURS PLAY TIME

GRAPHICS: 160X144 RESOLUTION, UP TO 56 COLOURS FROM A 32,768 PALETTE, UP TO 40 SPRITES ON-SCREEN SIMULTANEOUSLY

AUDIO: TWO SQUARE WAVE CHANNELS, ONE WAVE CHANNEL, ONE NOISE CHANNEL

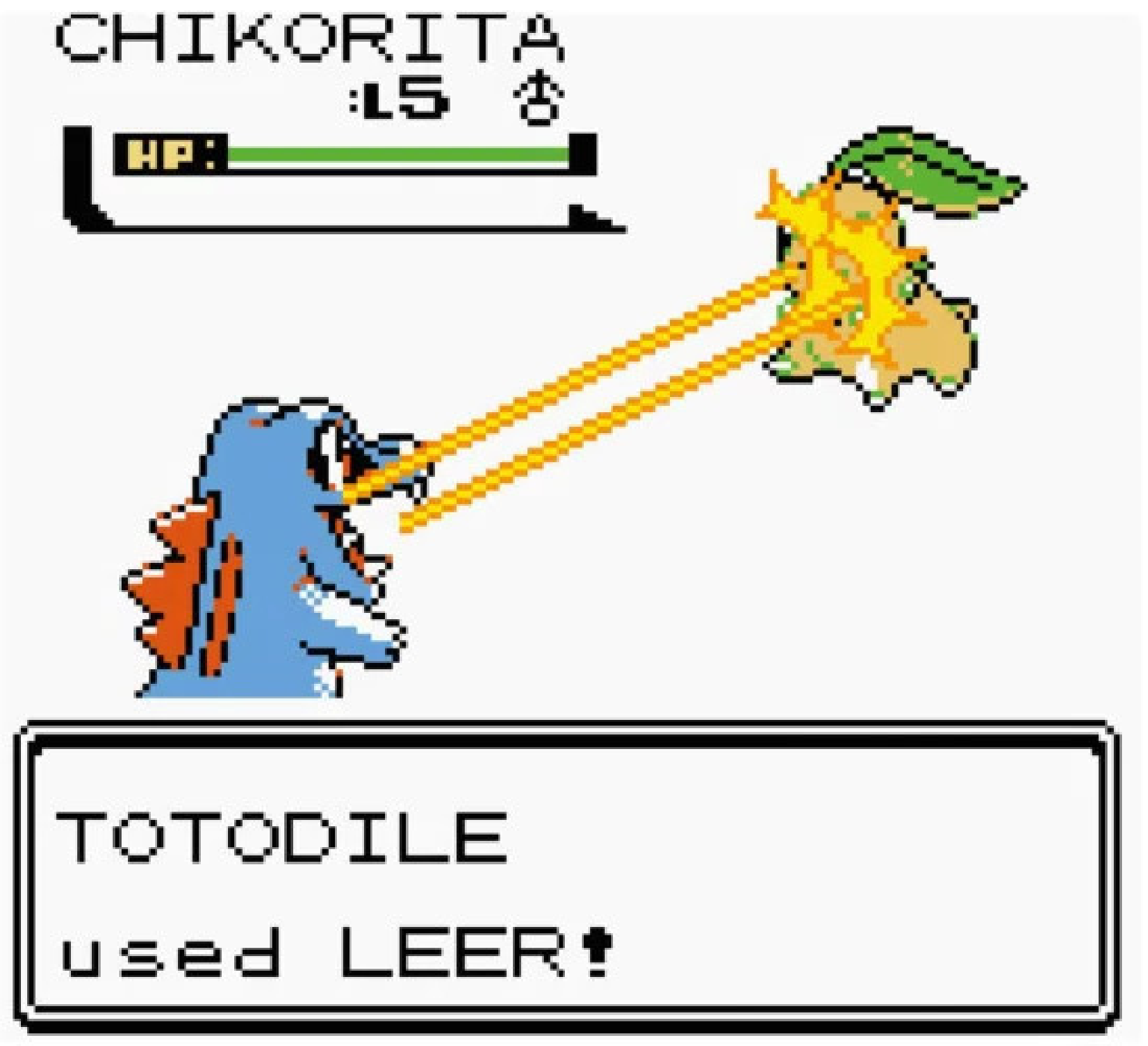
MEDIA: ROM CARTRIDGE (UP TO 8MB)

RAM: 32KB

ESSENTIAL GAME

Pokémon Gold & Silver

While you might be tempted to dismiss it as something you're 'too old for', the second major *Pokémon* release is a towering achievement on Nintendo's handheld. The game is a sprawling RPG with real mechanical depth, and a huge amount of content – as well as the new Johto region, you can go back and explore Kanto from *Red & Blue*, so it offers plenty to see and do before you even think about trying to fill out your Pokédex. You might need to replace the cartridge battery to get the real-time clock working these days, but it will be worth it.



TOTODILE
used LEER!

retro GAMER READERS' CHOICE

Nintendo
POWER
001
LAP 2/3
TIME 0'40"43
2
3rd
START
SELECT
A
B
GAME BOY ADVANCE

TOP 25 GAME BOY ADVANCE GAMES

It might not have had the longest lifespan, but Nintendo's handheld had more than its fair share of incredible games. Readers voted for over 150 different games, but only 25 can be considered truly elite – Nick Thorpe starts the countdown…

25 Gunstar Future Heroes

■ DEVELOPER: **Treasure/Hitmaker**
■ GENRE: **Run-and-gun** ■ YEAR: **2005**

It feels more like a remake, but the return of *Gunstar Heroes* is packed with variety and some great throwback sections. Thanks to Treasure's programming, it's also one of the system's most impressive games.

24 Sonic Advance

■ DEVELOPER: **Dimps**
■ GENRE: **Platformer** ■ YEAR: **2001**

It was almost heretical in 2001, but Nintendo's handheld proved to be a fine home for Sega's mascot. The first game in the *Advance* trilogy is the best of the bunch, sticking to what made the Mega Drive games great.

23 Super Mario Advance 3: Yoshi's Island

■ DEVELOPER: **Nintendo**
■ GENRE: **Platformer** ■ YEAR: **2002**

The GBA was home to quite a few conversions of great SNES games, and *Yoshi's Island* is one of the very best. Very few compromises were made to bring the Super FX 2-powered original to the portable system.

22 F-Zero: Maximum Velocity

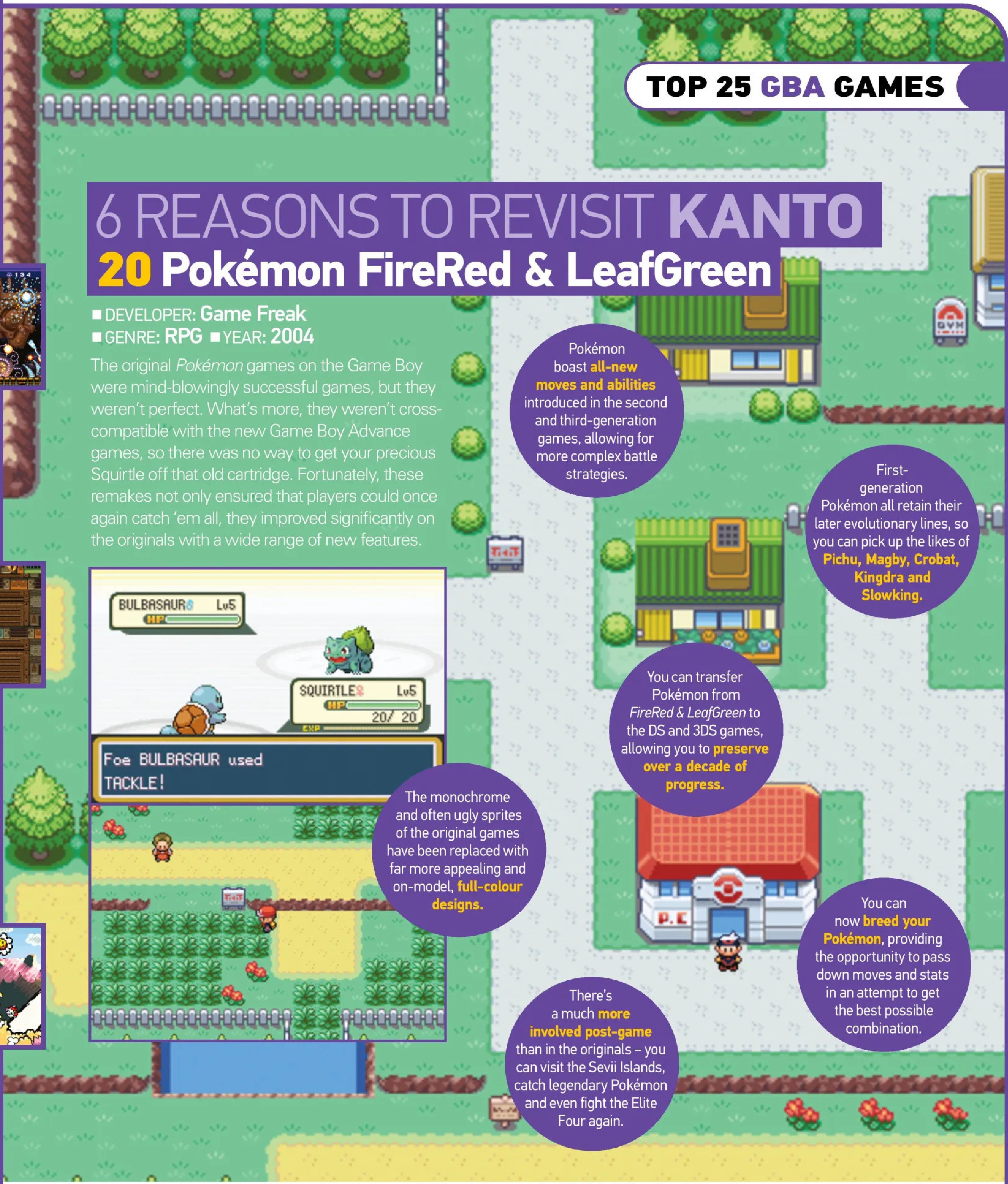
■ DEVELOPER: **Nd Cube**
■ GENRE: **Racing** ■ YEAR: **2001**

Who needs full 3D when you can have the retro delight of Mode 7-style rotating race tracks? This sequel to the SNES classic delivers a brand-new set of vehicles and tracks, but keeps the classic fun.

21 Rhythm Tengoku

■ DEVELOPER: **Nintendo SPD**
■ GENRE: **Rhythm action** ■ YEAR: **2006**

The very last first-party release for the GBA didn't make it out of Japan, but the thriving import market lapped up the addictive beat-based minigames. Sequels for the DS, Wii and 3DS followed.



Foe BULBASAUR used TACKLE!

6 REASONS TO REVISIT **KANTO**

20 Pokémon FireRed & LeafGreen

■ DEVELOPER: **Game Freak**
■ GENRE: **RPG** ■ YEAR: **2004**

The original *Pokémon* games on the Game Boy were mind-blowingly successful games, but they weren't perfect. What's more, they weren't cross-compatible with the new Game Boy Advance games, so there was no way to get your precious Squirtle off that old cartridge. Fortunately, these remakes not only ensured that players could once again catch 'em all, they improved significantly on the originals with a wide range of new features.

Pokémon boast **all-new moves and abilities** introduced in the second and third-generation games, allowing for more complex battle strategies.

First-generation Pokémon all retain their later evolutionary lines, so you can pick up the likes of **Pichu, Magby, Crobat, Kingdra and Slowking.**

You can transfer Pokémon from *FireRed & LeafGreen* to the DS and 3DS games, allowing you to **preserve over a decade of progress.**

The monochrome and often ugly sprites of the original games have been replaced with far more appealing and on-model, **full-colour designs.**

You can now **breed your Pokémon**, providing the opportunity to pass down moves and stats in an attempt to get the best possible combination.

There's a much **more involved post-game** than in the originals – you can visit the Sevii Islands, catch legendary Pokémon and even fight the Elite Four again.

PERFECTION IN YOUR POCKET

19 Super Mario Advance 2: Super Mario World

■ DEVELOPER: **Nintendo EAD**
■ GENRE: **Platformer** ■ YEAR: **2001**

When we asked our readers to name the very best games ever for issue 150 of **Retro Gamer**, *Super Mario World* was the one that topped the epic list due to its superlative level design, structure and sense of adventure. Since Nintendo saw fit to give it a portable outing on the Game Boy Advance, it stands to reason you'd be seeing it in this list too – it wasn't new, but it was a near-perfect game very closely replicated for handheld players.

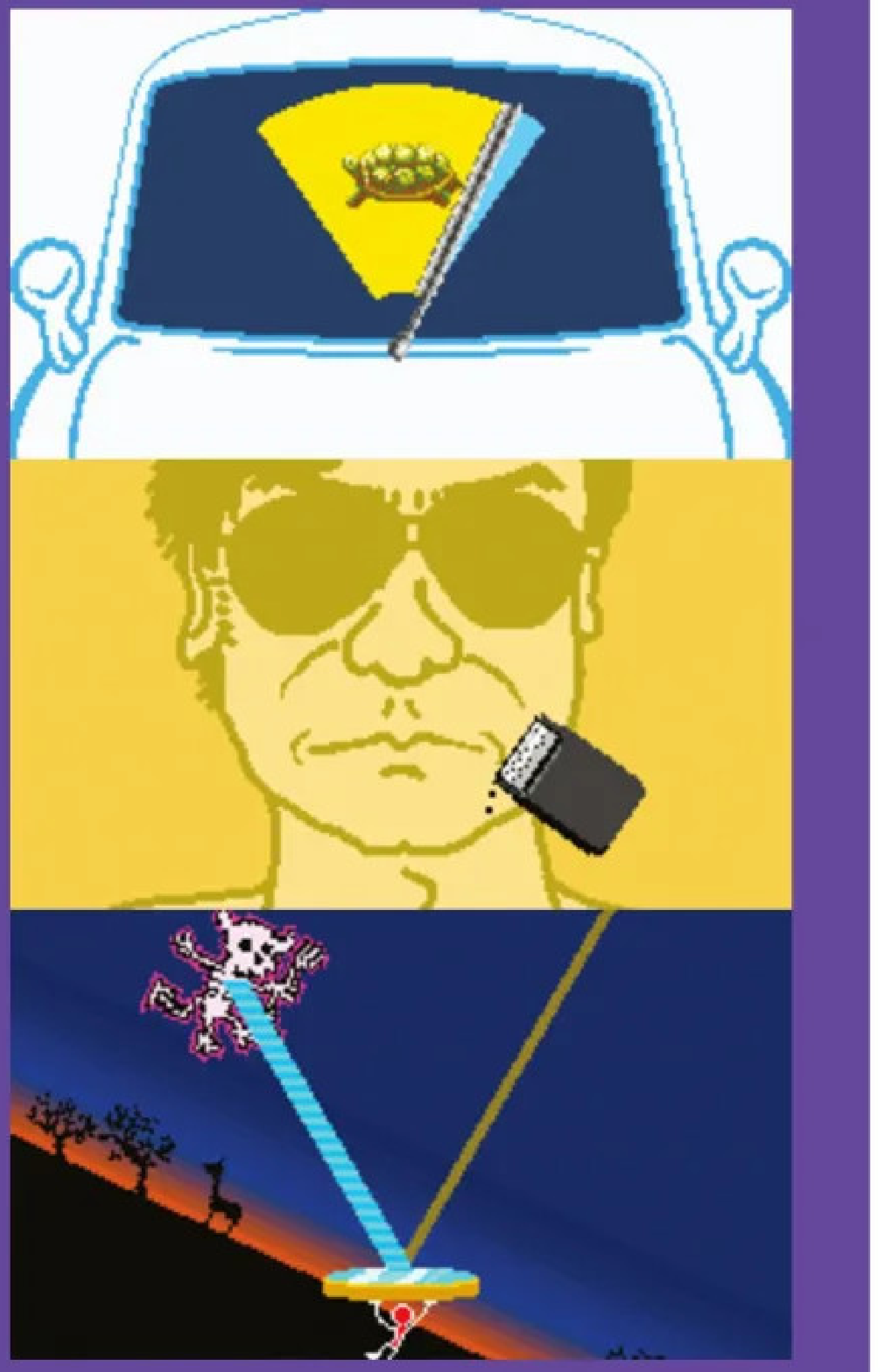
Of course, there's a bit more to this release than being just a straight conversion of the SNES original. The colours have been lightened a bit to help owners of early Game Boy Advance models, there's a brand-new intro sequence, and there are now Dragon Coins in levels that didn't originally have them.

×12
×58
TIME 256
82210

NEW TWISTS ON OLD WARES

18 Wario Ware Twisted

■ DEVELOPER: **Intelligent Systems**
■ GENRE: **Minigame collection** ■ YEAR: **2004**



- ***Wario Ware Twisted* included both a gyro sensor and a rumble feature, allowing for motion-controlled games with a force-feedback feature.**

- Unlike the first game, *Wario Ware Twisted* features games which require you to turn your system around – sometimes through a full-360 degrees.

- **Despite the fact that the cartridge houses the gyro sensor, the game works identically on all compatible hardware (although we don't recommend using the Game Boy Player).**

- *Wario Ware Twisted* wasn't released in Europe due to the presence of mercury within the gyro sensor – a banned substance in electronics within the European Union.

WAR NEVER CHANGES (MUCH)

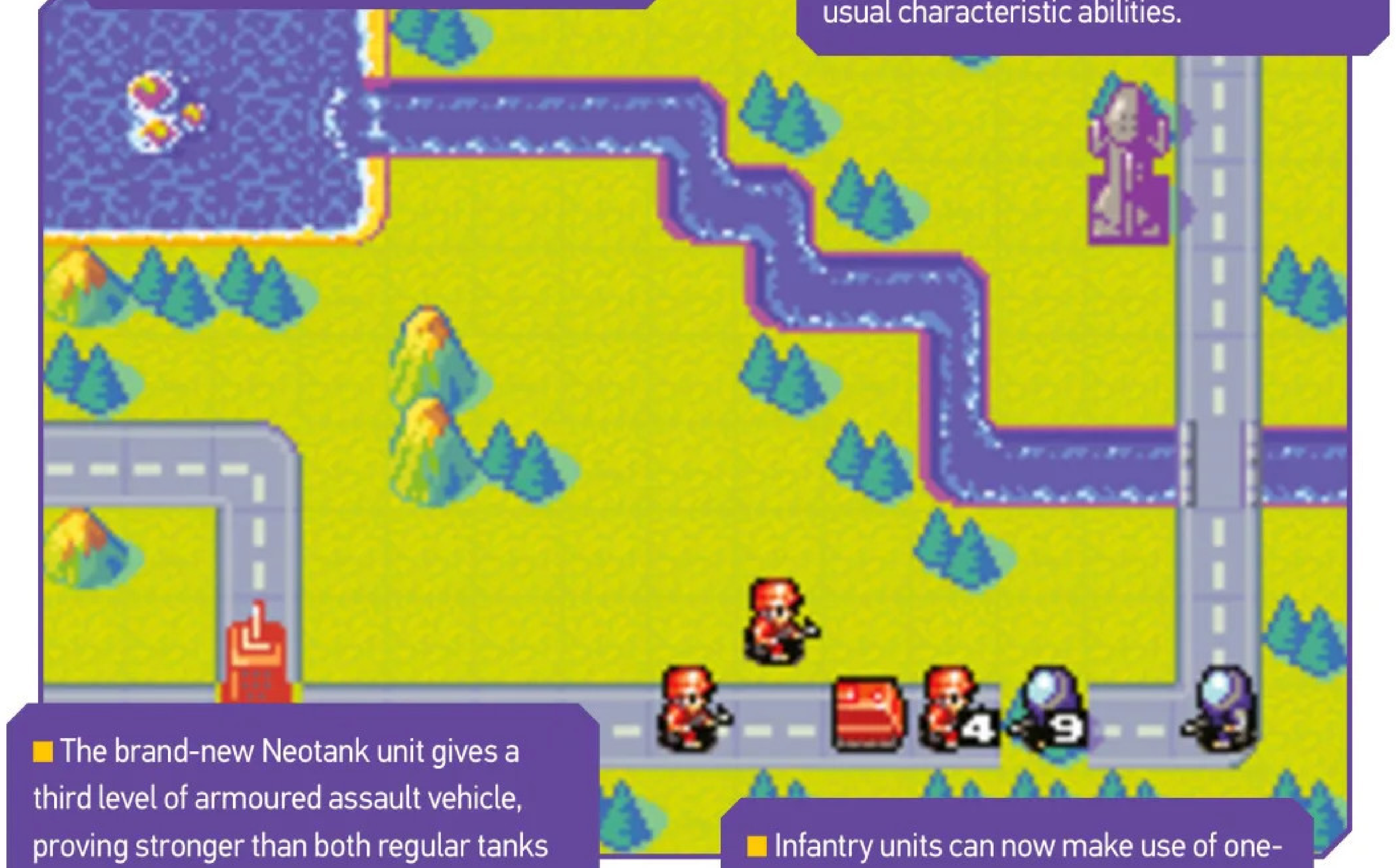
17 Advance Wars 2

■ DEVELOPER: **Intelligent Systems**
■ GENRE: **Strategy** ■ YEAR: **2003**

The original *Advance Wars* was a stunningly good handheld strategy game, and the sequel didn't mess with a winning formula. A new campaign mode featured the Black Hole Army's bid for dominance over Macro Land, but few other substantial changes were made – here are the most notable ones…

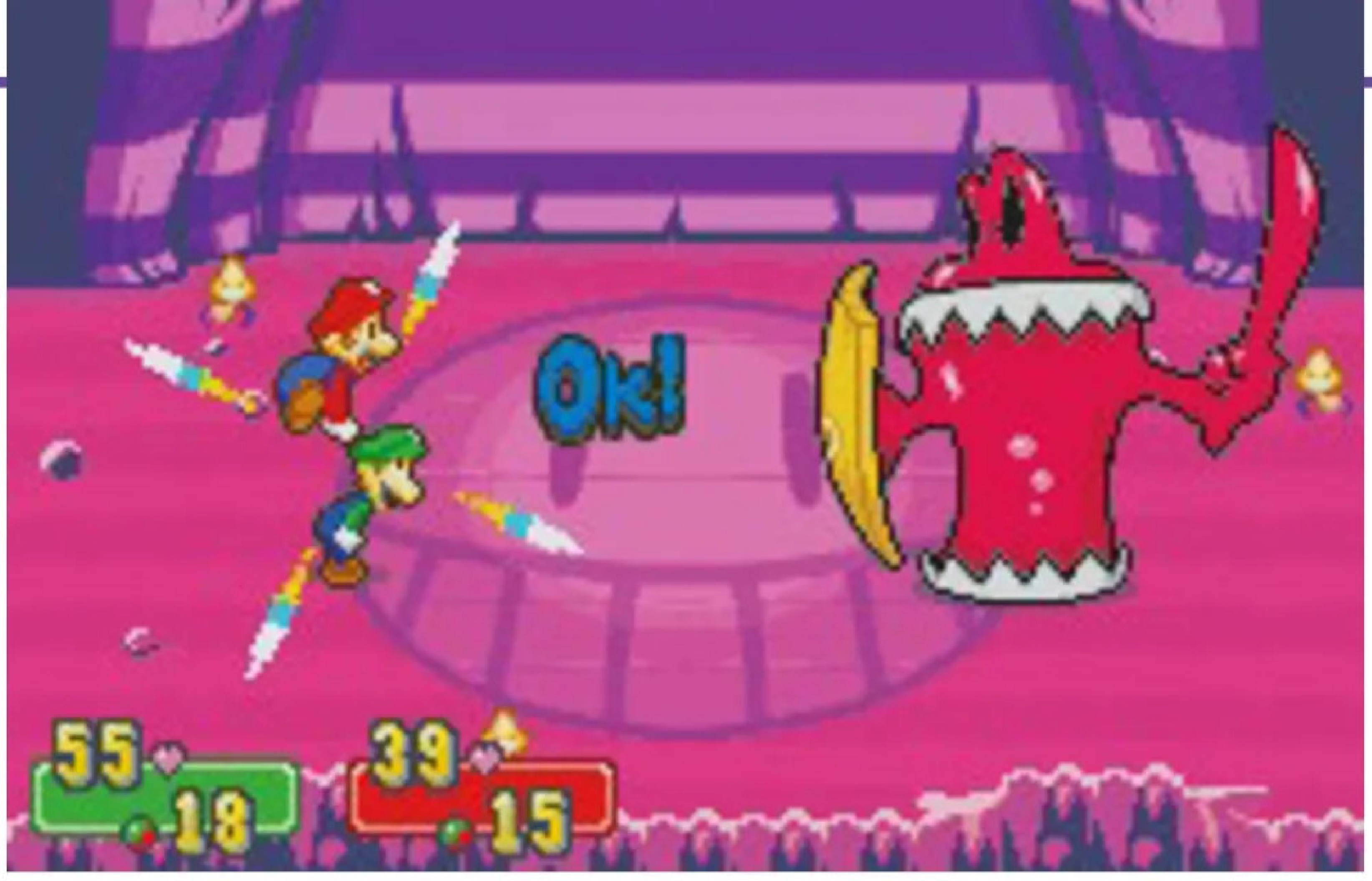
- Eight new commanding officers join the game – Hachi from Orange Star, Colin from Blue Moon, Yellow Comet's Sensei, Jess of Green Earth, plus Adder, Lash, Flak and Hawke from Black Hole.

- As well as the original CO Powers, commanding officers in *Advance Wars 2* can charge up to a second level for Super CO Powers – enhanced versions of their usual characteristic abilities.



- The brand-new Neotank unit gives a third level of armoured assault vehicle, proving stronger than both regular tanks and medium tanks. Of course, they're also more expensive.

- Infantry units can now make use of one-shot missile silo emplacements, spreading damage across a wide area without having to get up close and personal with the enemy's forces.

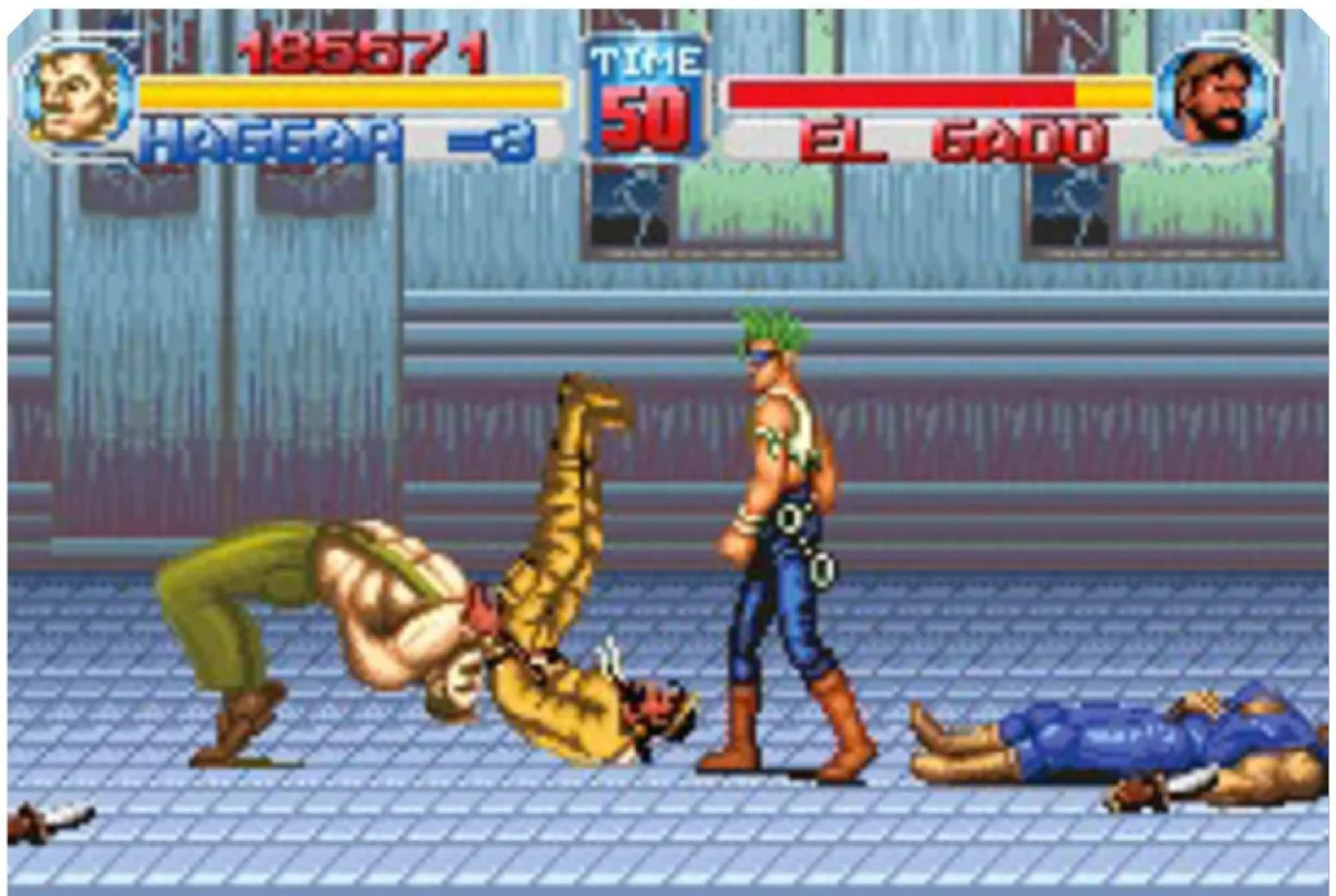


SUPER RPG BROS.

16 Mario & Luigi: Superstar Saga

■ DEVELOPER: **AlphaDream** ■ GENRE: **RPG** ■ YEAR: **2003**

Having already had *Super Mario RPG* and *Paper Mario*, Nintendo's portly plumber wasn't satisfied with his level of role-playing stardom and roped his brother in for another new spin on the genre. Vibrant sprite work, genuinely amusing dialogue and simultaneous control of the brothers make this a treat.



RIGHTING THE WRONGS OF THE PAST

15 Final Fight One

■ DEVELOPER: **Capcom** ■ GENRE: **Beat-'em-up** ■ YEAR: **2001**

In the late Eighties, you couldn't find a better arcade beat-'em-up than Capcom's *Final Fight*, so it's easy to understand why SNES owners would have been excited to get their hands on a conversion. Unfortunately for them, it wasn't all it could be – not only was it missing an entire level, one third of the protagonists, Guy, had done a runner and you couldn't even play a multiplayer game with the remaining characters Cody and Haggar. It wasn't a bad beat-'em-up, but it wasn't the experience that fans had hoped for.

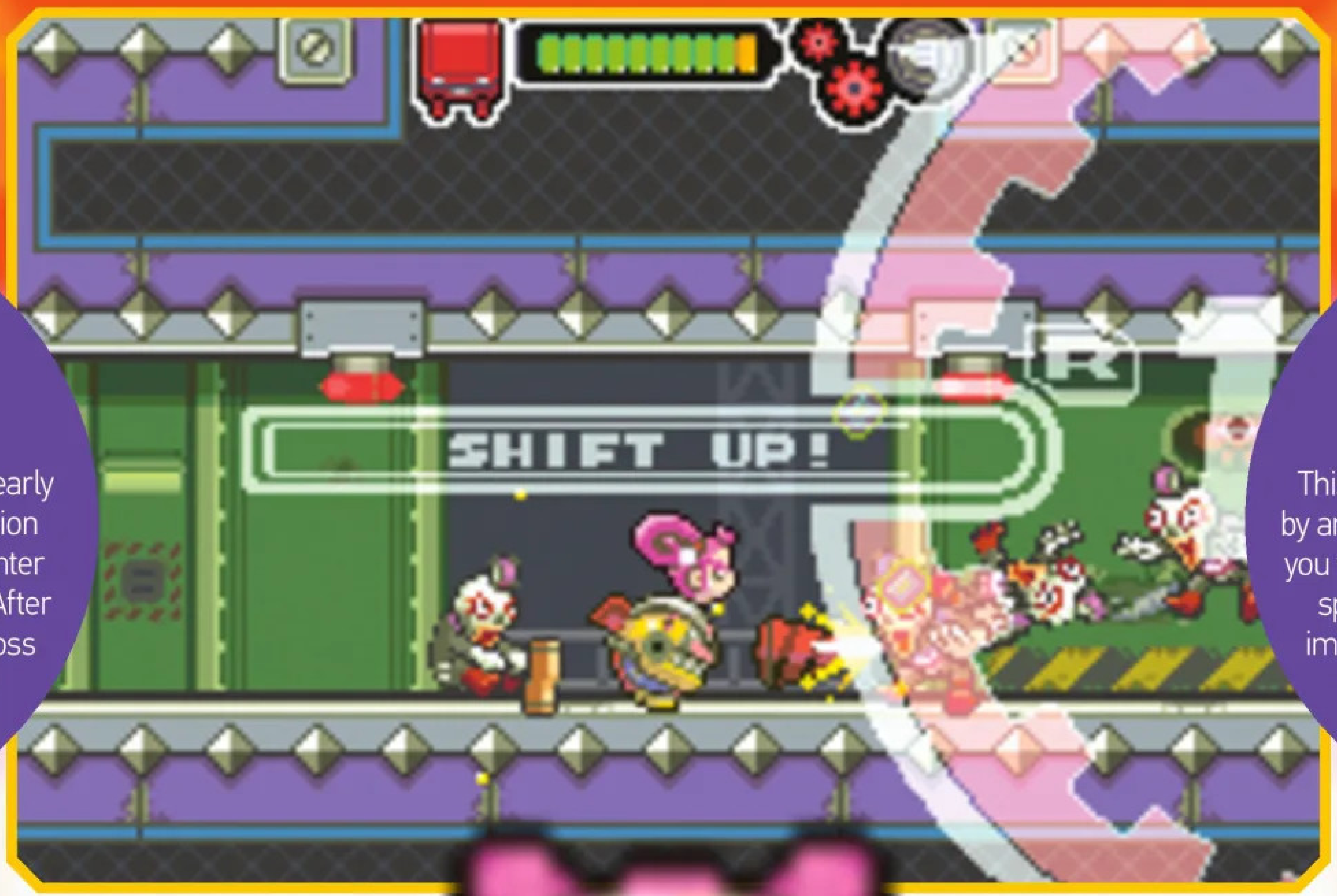
Thankfully, Capcom was able to rectify all those mistakes on the GBA. The SNES visuals have been pulled across, but this time the game has the Industrial Area, you can play as all three characters, there are more enemies on screen and with a link cable you can even play co-op games. There are even some new additions for fans – each boss is now preceded by a dialogue scene, and the *Street Fighter Alpha 3* versions of Cody and Guy can be unlocked as alternate characters. It might just be the definitive version of the game.

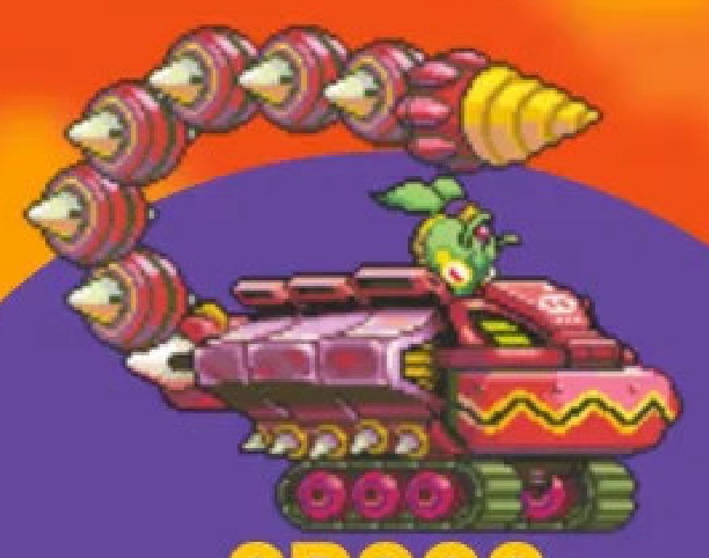
RUMBLE WITH THE BOSSES

14 Drill Dozer

■ DEVELOPER: **Game Freak** ■ GENRE: **Platformer** ■ YEAR: **2005**

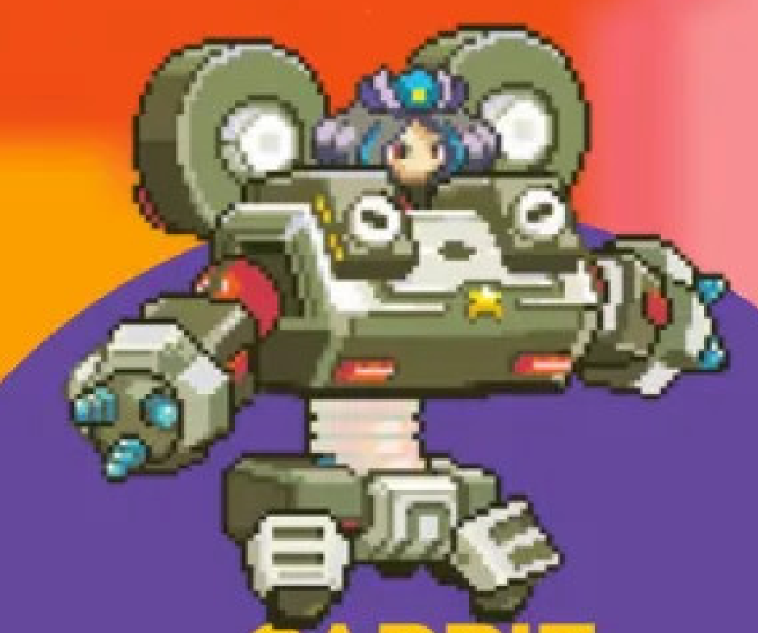
There's more to Game Freak than *Pokémon*, although you wouldn't know it from the company's Noughties output – *Drill Dozer* is the only original IP the company developed during that entire decade. Luckily, it's an excellent platformer with a cool central mechanic. You take control of Jill, a member of the Red Dozers bandit gang and pilot of the powerful Drill Dozer. This vehicle can drill through walls, enemies, barriers and more, with more durable objects requiring you to shift to higher gears. The cartridge includes a built-in rumble feature, allowing you to really feel the carnage you're causing.





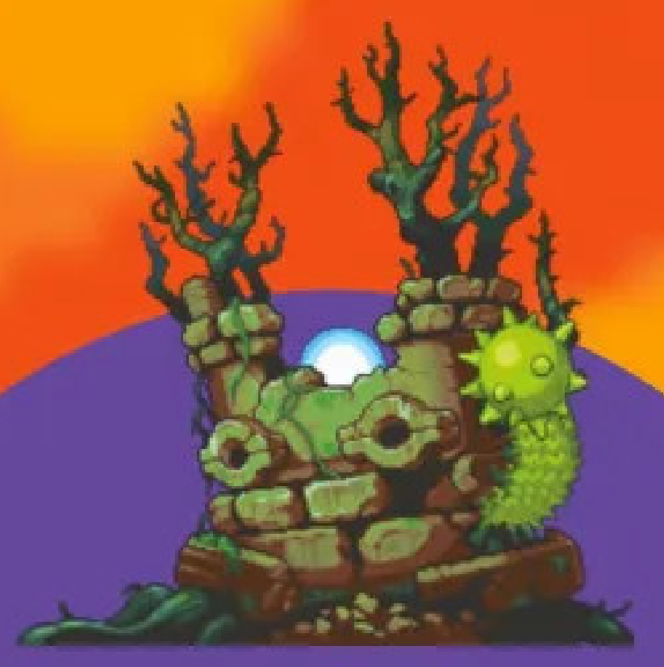
CROOG

This is your big bad guy, and in your early encounters he'll use this neat scorpion robot to attack you. You have to counter its drill with your own to damage it. After taking sufficient punishment, the boss will transform – and that's only the start of your troubles with Croog.



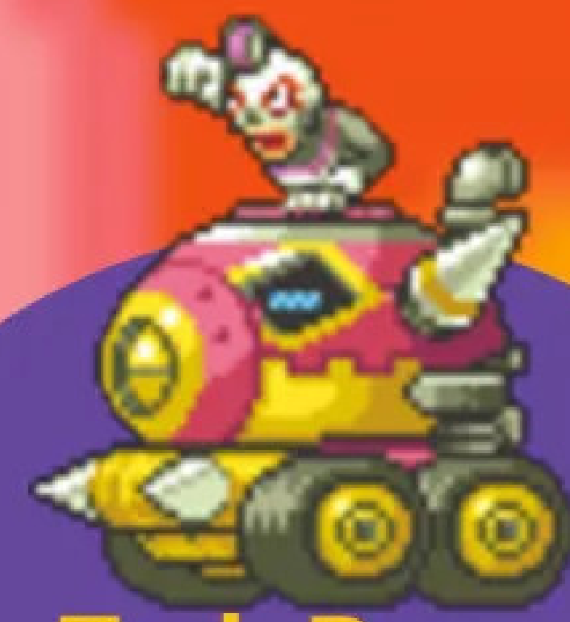
CARRIE

Carrie's a detective, and thus on the side of the forces of good. Of course, you're a bandit, so you're not exactly on the law-abiding side, which will bring you into conflict often. In this form, drill into the cable that connects the two halves of her police-bot to win.



Haunted Statue

This malevolent masonry is possessed by an evil spirit, and is quite happy to splat you with its spiked mace! However, those spikes can retract if they make a big impact on the ground – when they do, you'll get an opportunity to drill into the mace and damage your enemy.

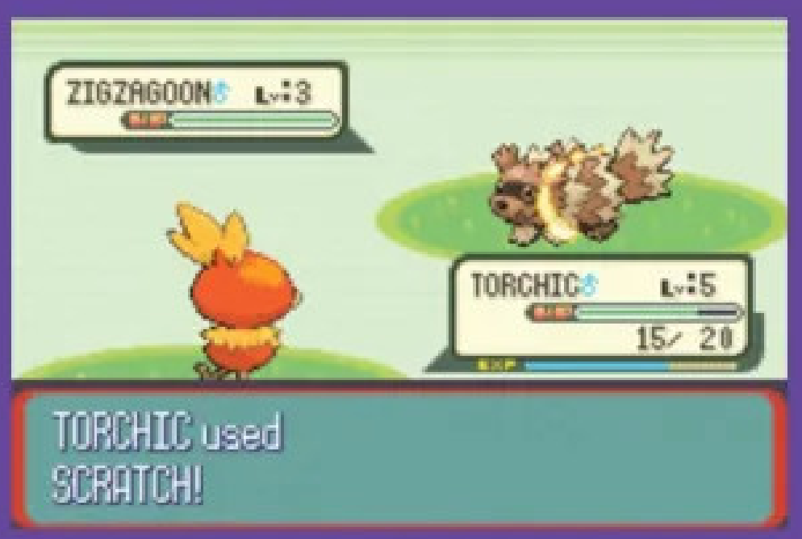


Tank Dozer

Skullkers aren't particularly formidable enemies, so some of them will try to improve their odds by manning tanks. These are easy to take out – just drill into the front hole and accelerate to third gear. However, they have the ability to strike in tandem, so watch out…

13 Pokémon Ruby, Sapphire & Emerald

■ DEVELOPER: **Game Freak**
■ GENRE: **RPG** ■ YEAR: **2003**

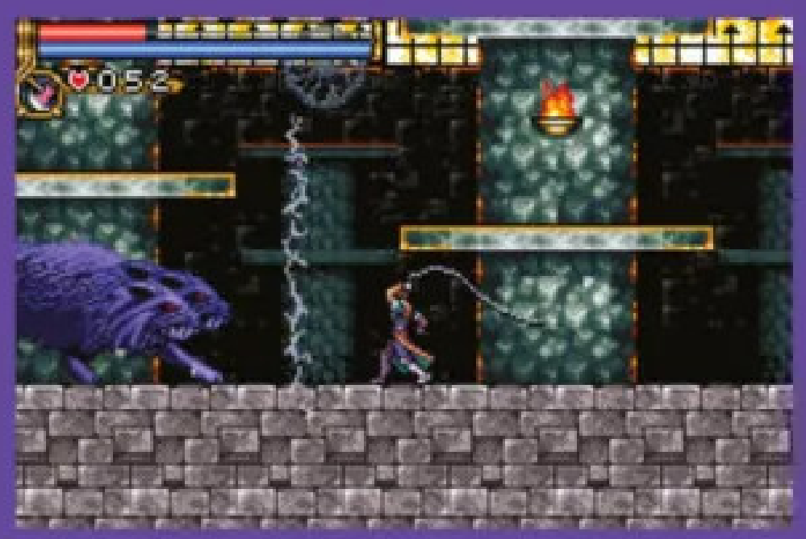


TORCHIC used SCRATCH!

Unsurprisingly, the only brand-new *Pokémon* adventures for the Game Boy Advance were its bestselling games. Two-on-two battles were introduced for the first time, and 135 new creatures were available to catch – however, it was also the first set of games in the series in which you could no longer catch 'em all.

12 Castlevania

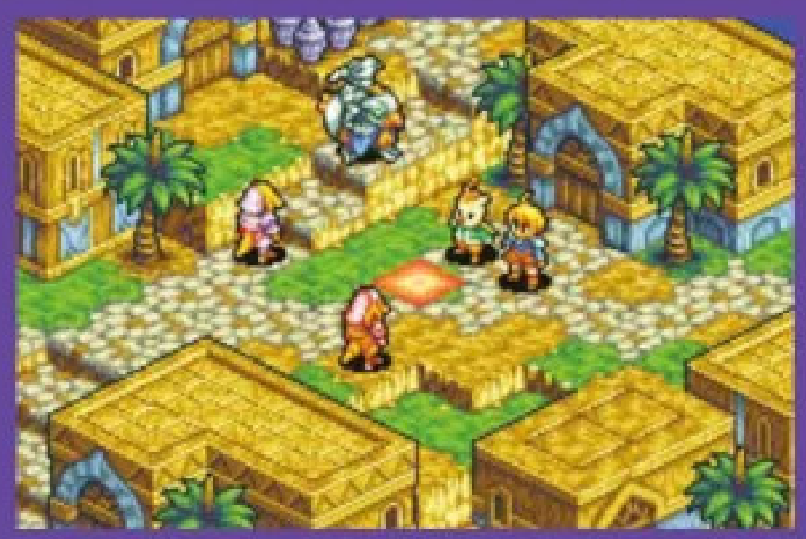
■ DEVELOPER: **Konami Computer Entertainment Kobe**
■ GENRE: **Action-adventure** ■ YEAR: **2001**



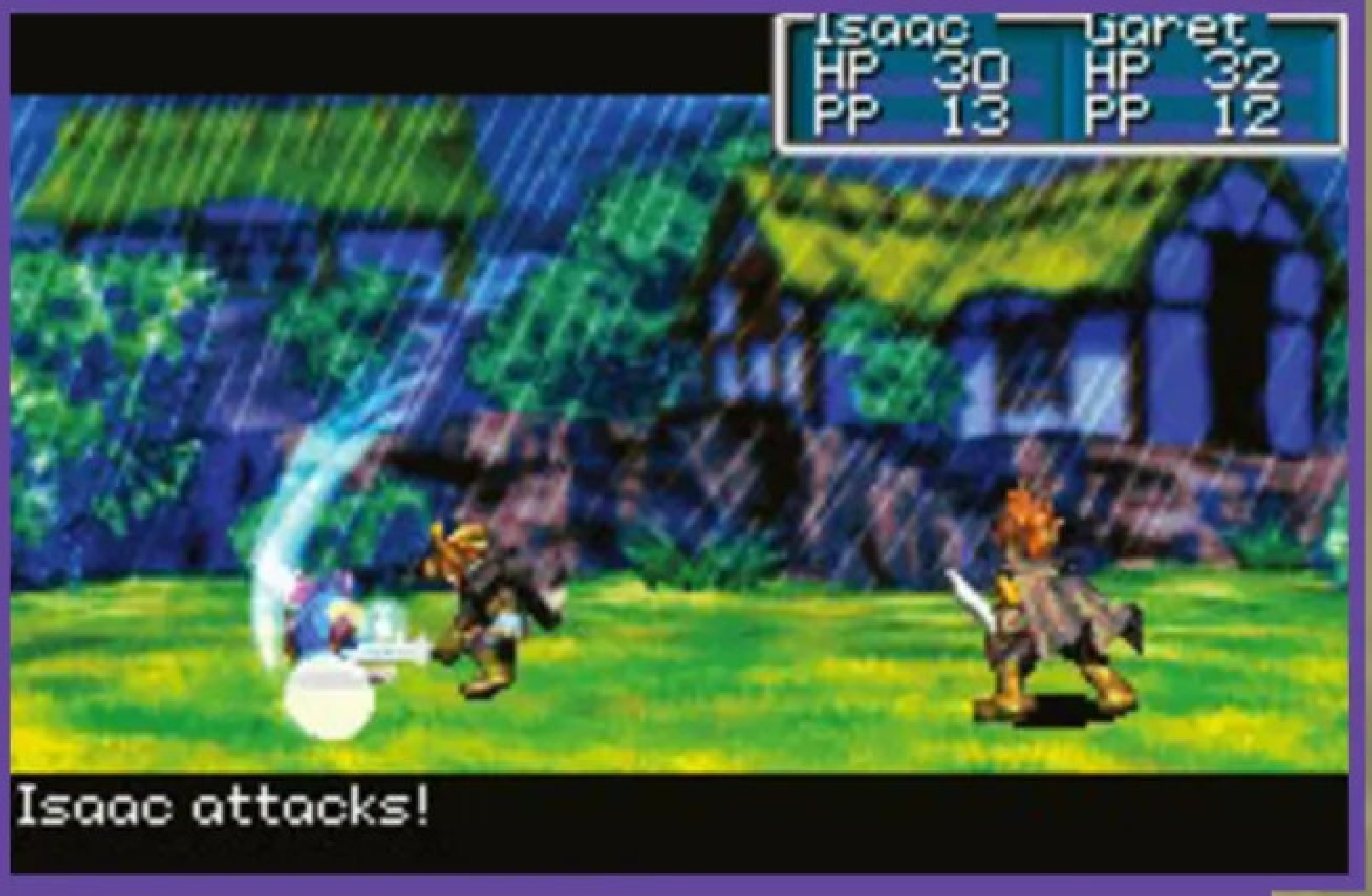
It might not be Koji Igarashi's favourite *Castlevania*, but the first of the series' three Game Boy Advance versions is a hit with fans. Despite dark visuals unsuited for the original machine's non-lit screen, the game impressed with a structure that was reminiscent of the PlayStation classic *Symphony Of The Night*.

11 Final Fantasy Tactics Advance

■ DEVELOPER: **Square Enix**
■ GENRE: **RPG** ■ YEAR: **2003**



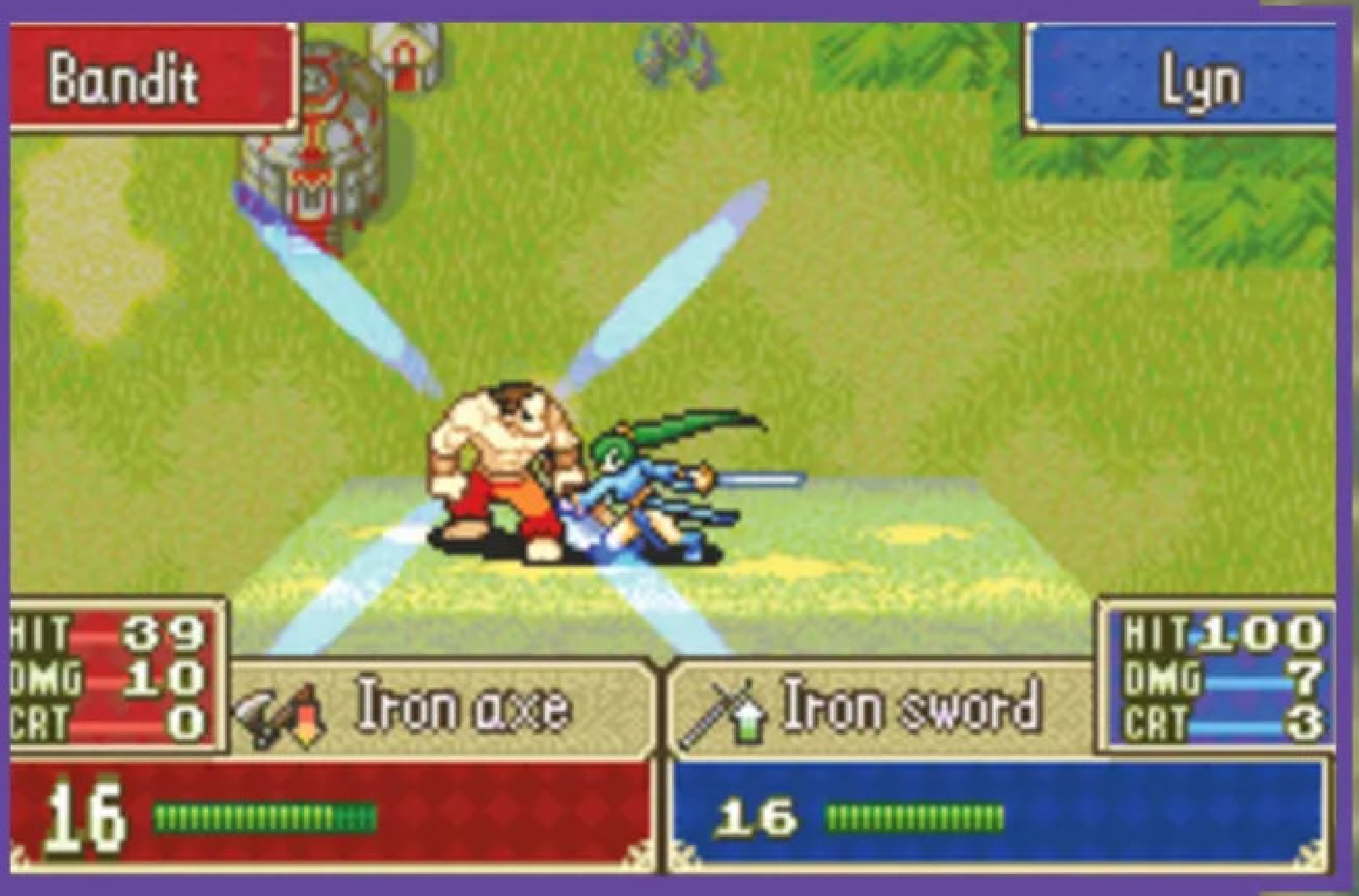
This follow-up to the excellent PlayStation spin-off *Final Fantasy Tactics* is a masterful isometric strategy RPG, and since its plot is standalone you can jump right in. The most striking feature of this game is the Laws system, in which in-game judges forbid certain actions and reward others.



10 Golden Sun

■ DEVELOPER: **Camelot Software Planning**
■ GENRE: **RPG** ■ YEAR: **2001**

There's no shortage of traditional Japanese RPGs on the Game Boy Advance, but this original effort even beats out beloved classics like *Final Fantasy VI* in your voting. The protagonist Isaac and his companions are out to stop alchemy from returning to the world of Weyard, in an attempt to prevent worldwide conflict. The most striking feature of the game is the ability to assign Djinn creatures to characters, altering their stats and classes as well as granting the ability to perform summon spells.



9 Fire Emblem

■ DEVELOPER: **Intelligent Systems**
■ GENRE: **Strategy** ■ YEAR: **2003**

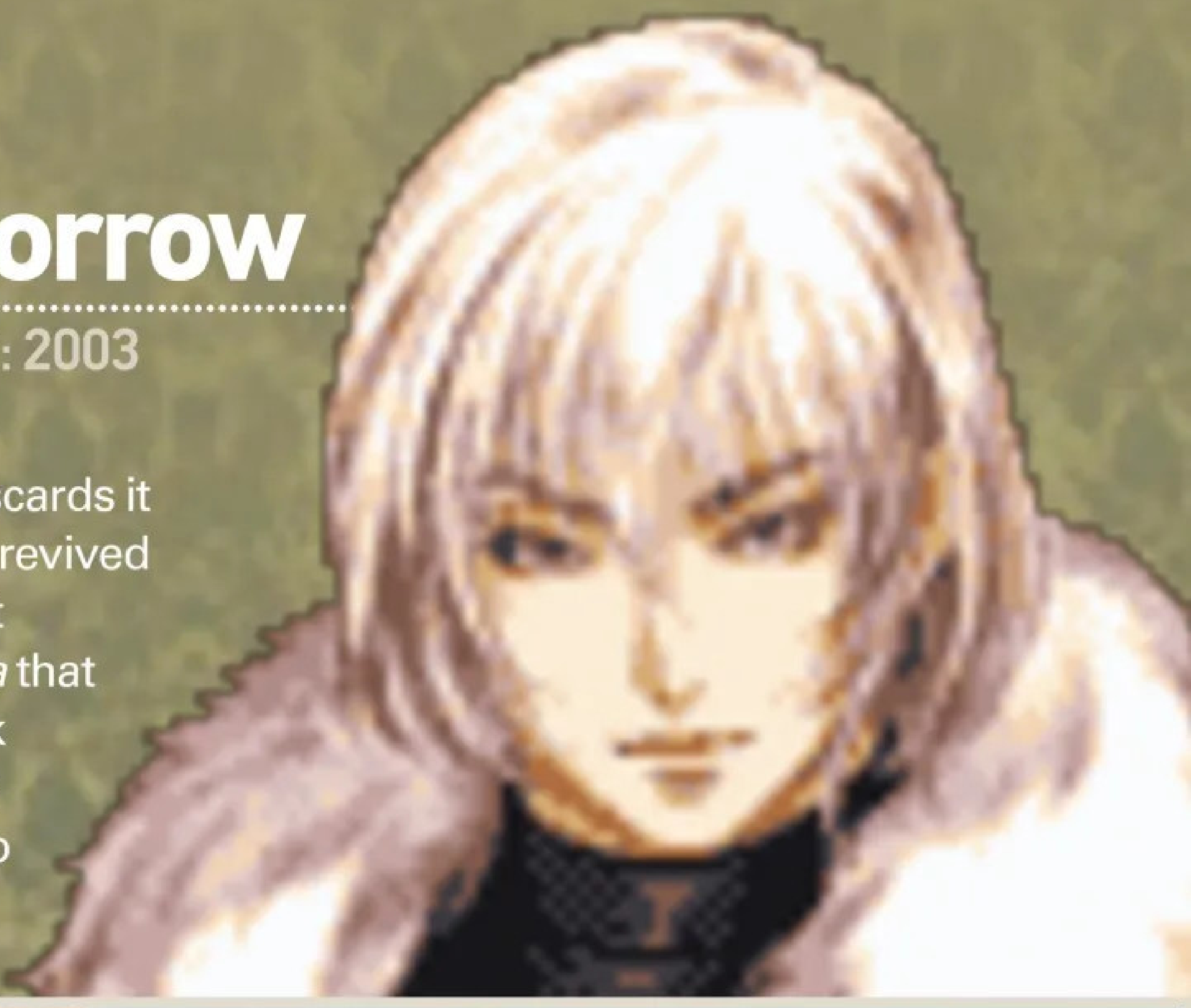
After 13 years and six untranslated games, the *Fire Emblem* finally made its Western debut on the Game Boy Advance, and it was more than worth the wait. Excellent tactical battles and the ability to permanently lose your characters are the defining features of this game, which offers a substantial single-player campaign. Unfortunately for those of you that wish to pick up *Fire Emblem* now, scarcity has driven the second hand value far above its original retail price.

8 Astro Boy: Omega Factor

■ DEVELOPER: **Treasure/Hitmaker**
■ GENRE: **Beat-'em-up** ■ YEAR: **2003**

Osamu Tezuka's famous creation gets an awesome beat-'em-up, courtesy of Sega's Hitmaker studio and technical wizards Treasure. What sets the *Omega Factor* apart from the rest is the non-linear structure that sees you jumping through time in an attempt to avert disaster, uncovering new and unseen parts of old levels in the process.

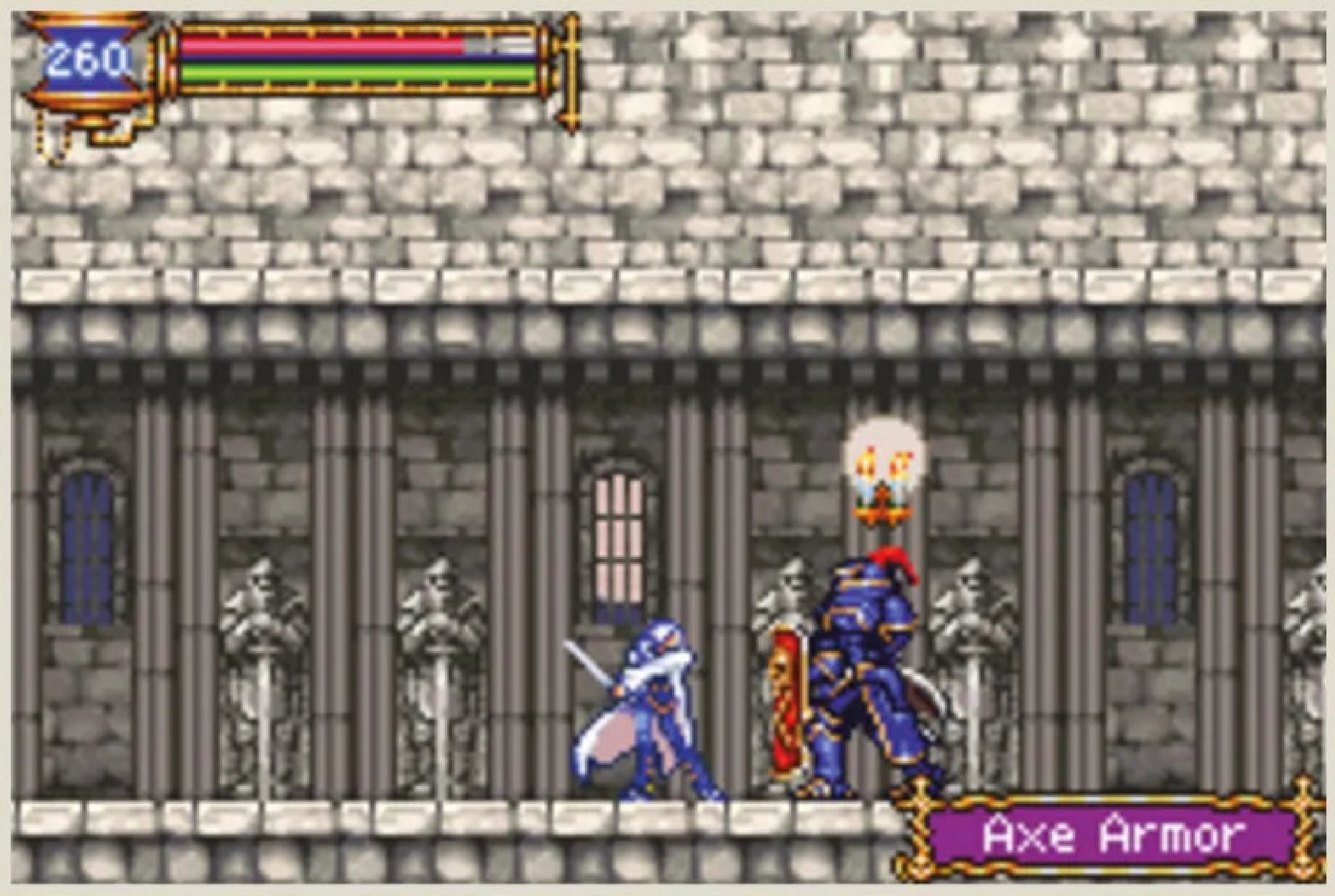
A NEW STYLE FOR ANCIENT EVIL

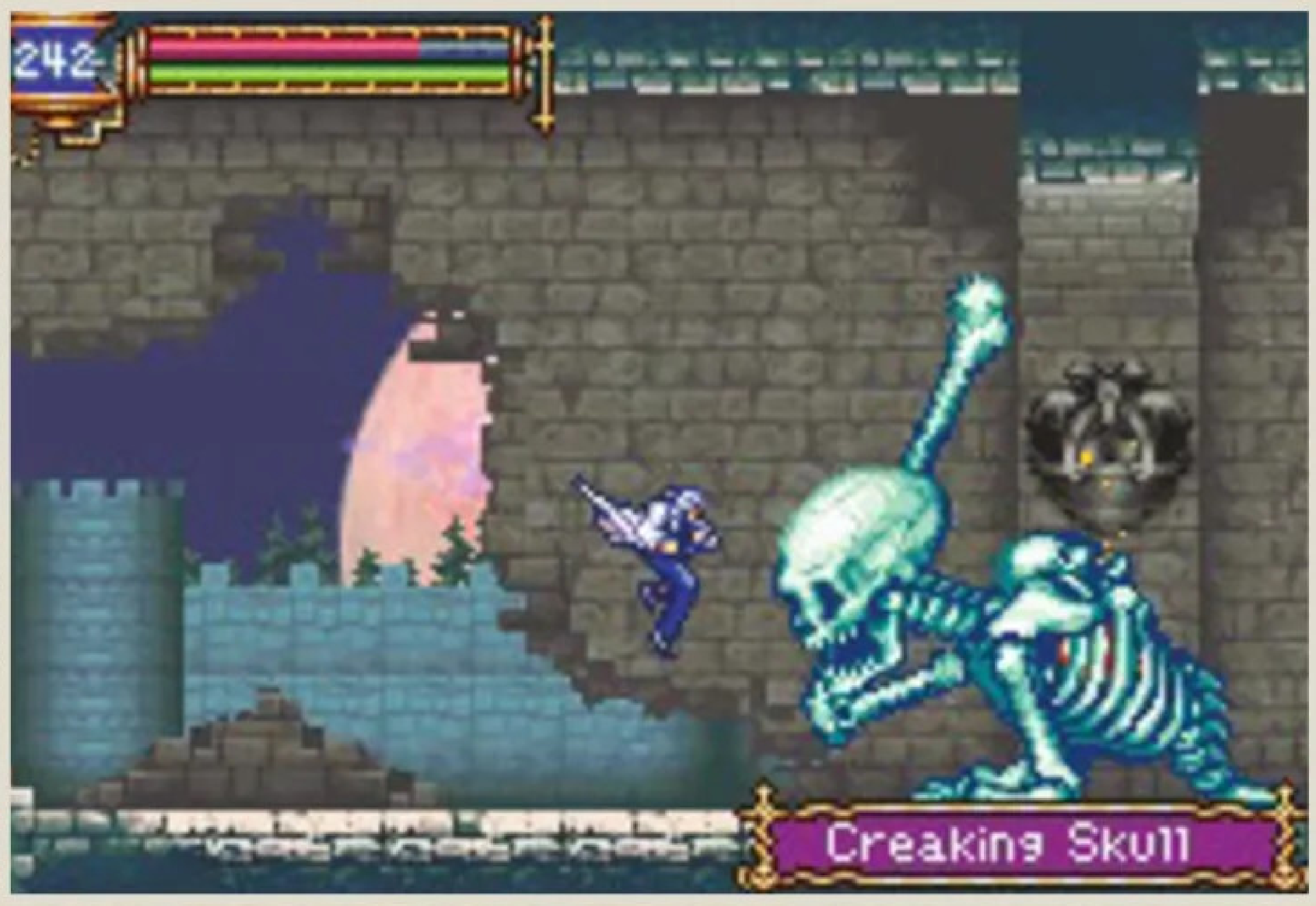


7 Castlevania: Aria Of Sorrow

■ DEVELOPER: **Konami** ■ GENRE: **Action-adventure** ■ YEAR: **2003**

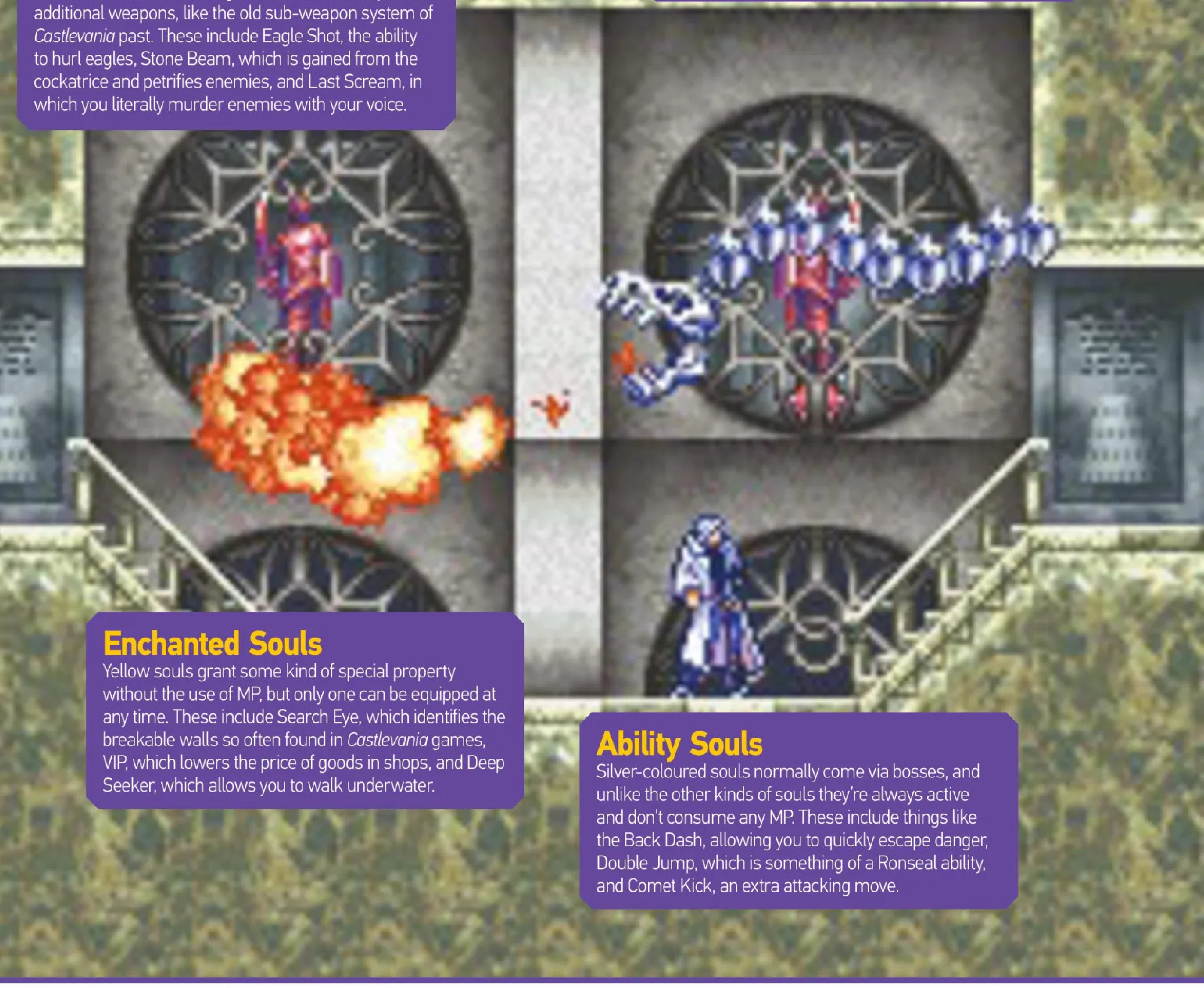
Castlevania is a series that takes place in the past. That's a fundamental truth of the franchise, and yet *Aria Of Sorrow* discards it with confidence to achieve a setting where Dracula has been revived in 2035. However, beyond the modern clothing of protagonist Soma Cruz, this is the kind of exploration-focused *Castlevania* that people have known and loved since Koji Igarashi's initial work on *Castlevania: Symphony Of The Night*. The big new feature here is the Tactical Soul system, which allows players to swap between abilities gained from defeating various enemies.





SWEET SOUL BROTHER

Learn how the Tactical Soul system works



Guardian Souls

These blue-coloured souls allow you to summon familiars and even transform into various nasty beasts. These souls include Devil Form, in which you become a devil and charge into enemies, Bat Form, which grants you the ability to fly about the castle, and Guardian Shadow Knight, which gives you an ally in battle.

Bullet Souls

These red-coloured souls grant Soma the ability to use additional weapons, like the old sub-weapon system of *Castlevania* past. These include Eagle Shot, the ability to hurl eagles, Stone Beam, which is gained from the cockatrice and petrifies enemies, and Last Scream, in which you literally murder enemies with your voice.

Enchanted Souls

Yellow souls grant some kind of special property without the use of MP, but only one can be equipped at any time. These include Search Eye, which identifies the breakable walls so often found in *Castlevania* games, VIP, which lowers the price of goods in shops, and Deep Seeker, which allows you to walk underwater.

Ability Souls

Silver-coloured souls normally come via bosses, and unlike the other kinds of souls they're always active and don't consume any MP. These include things like the Back Dash, allowing you to quickly escape danger, Double Jump, which is something of a Ronseal ability, and Comet Kick, an extra attacking move.

MICRO GAMES, **MEGA FUN**

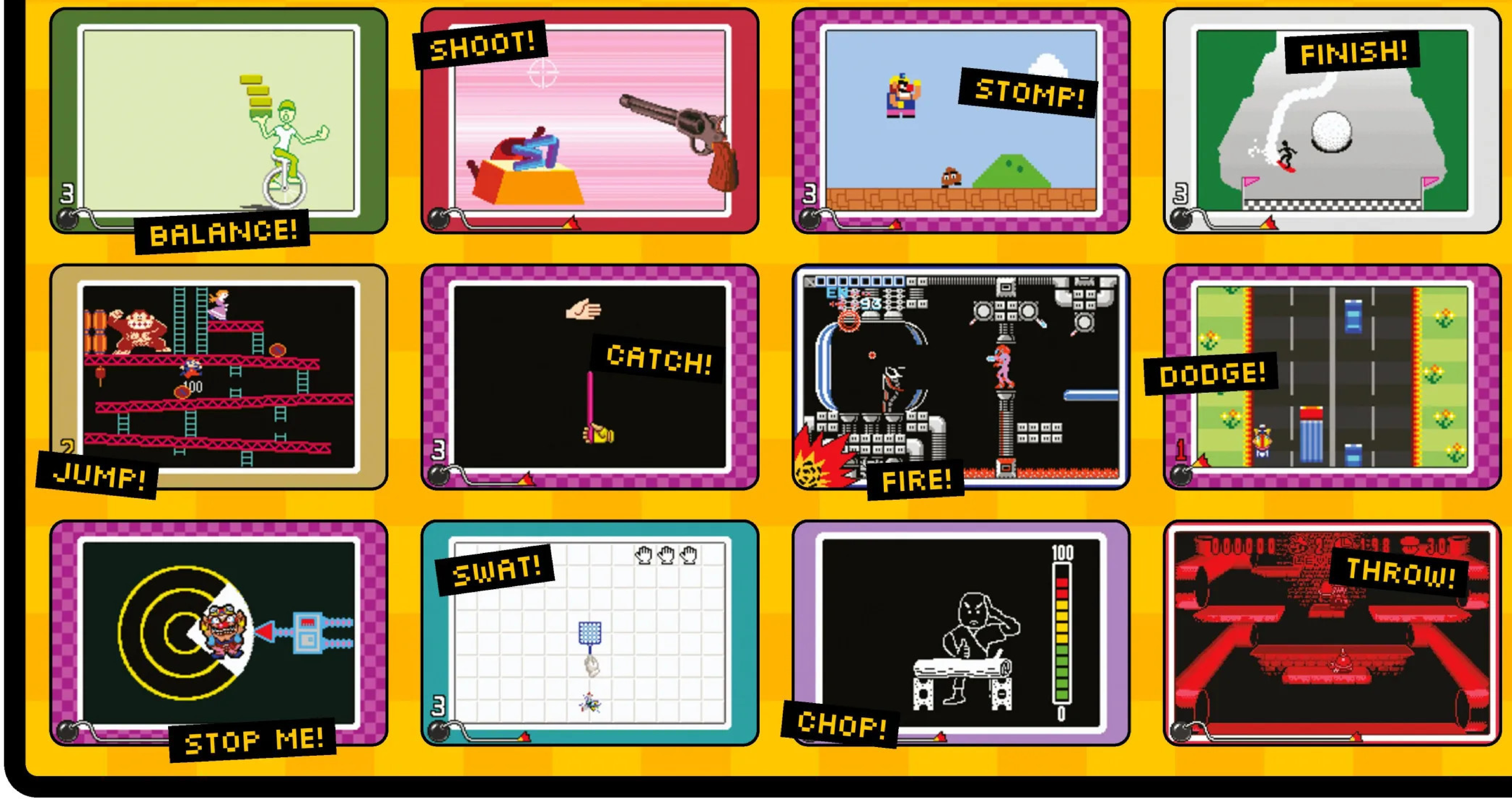
6 Wario Ware Inc.: Minigame Mania

■DEVELOPER: **Nintendo R&D1** ■GENRE: **Minigame Collection** ■YEAR: **2003**

Many of the best Game Boy Advance games are sequels and remakes, so a brand-new and innovative game is even more highly prized than usual – and *Wario Ware Inc.* is just such a game. The premise is simple: a rapid-fire procession of minigames, each with a singular goal and lasting no more than a few seconds at a time. The key to the game's appeal is variety – you never know what's coming next, and you'll be pushed hard as the speed increases and your reflexes struggle to keep up. Deservedly, this game was followed up by several sequels.

WARIO WAREHOUSE

A selection of the tiny games you'll take on in Wario Ware Inc.…



5 Metroid: Zero Mission

■DEVELOPER: **Nintendo R&D1**
■GENRE: **Action-adventure** ■YEAR: **2004**

When discussing how to follow up on *Metroid Fusion*, one of the developers suggested a conversion of *Super Metroid*, but Yoshio Sakamoto had other ideas. As a veteran of the series, Sakamoto decided to return to the roots of the series with a full remake of the original *Metroid*.

The presence of both *Metroid Fusion* and *Metroid: Zero Mission* on the GBA was beneficial. Both games offered different takes on the same template with *Zero Mission* favouring a more traditional *Metroid* experience.

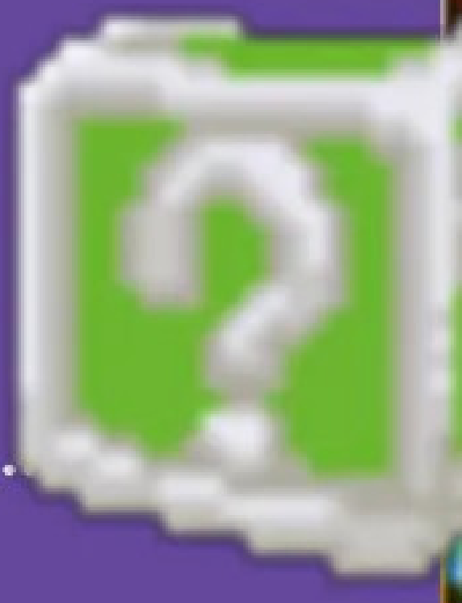
HOW **MINISH CAP** ENHANCED ZELDA

4 The Legend Of Zelda: The Minish Cap

■DEVELOPER: **Capcom** ■GENRE: **Action-RPG** ■YEAR: **2004**

- Unlike the vast majority of *Zelda* games, this one wasn't developed by Nintendo – instead, it was outsourced to Capcom.
- **Rather than manipulating time or the wind, Link is able to shrink in size in order to interact with the bug-sized Minish race.**
- For the first time in a handheld *Zelda*, Link can learn new sword techniques as he progresses throughout the game.
- **The brand-new Kinstones are pickups that, when fused, can yield rewards such as Rupees, sidequests and more.**
- Many new gameplay elements have been added from the 3D games, including rolling when running and the icon-based HUD.

RETRO RACING **RIOT**



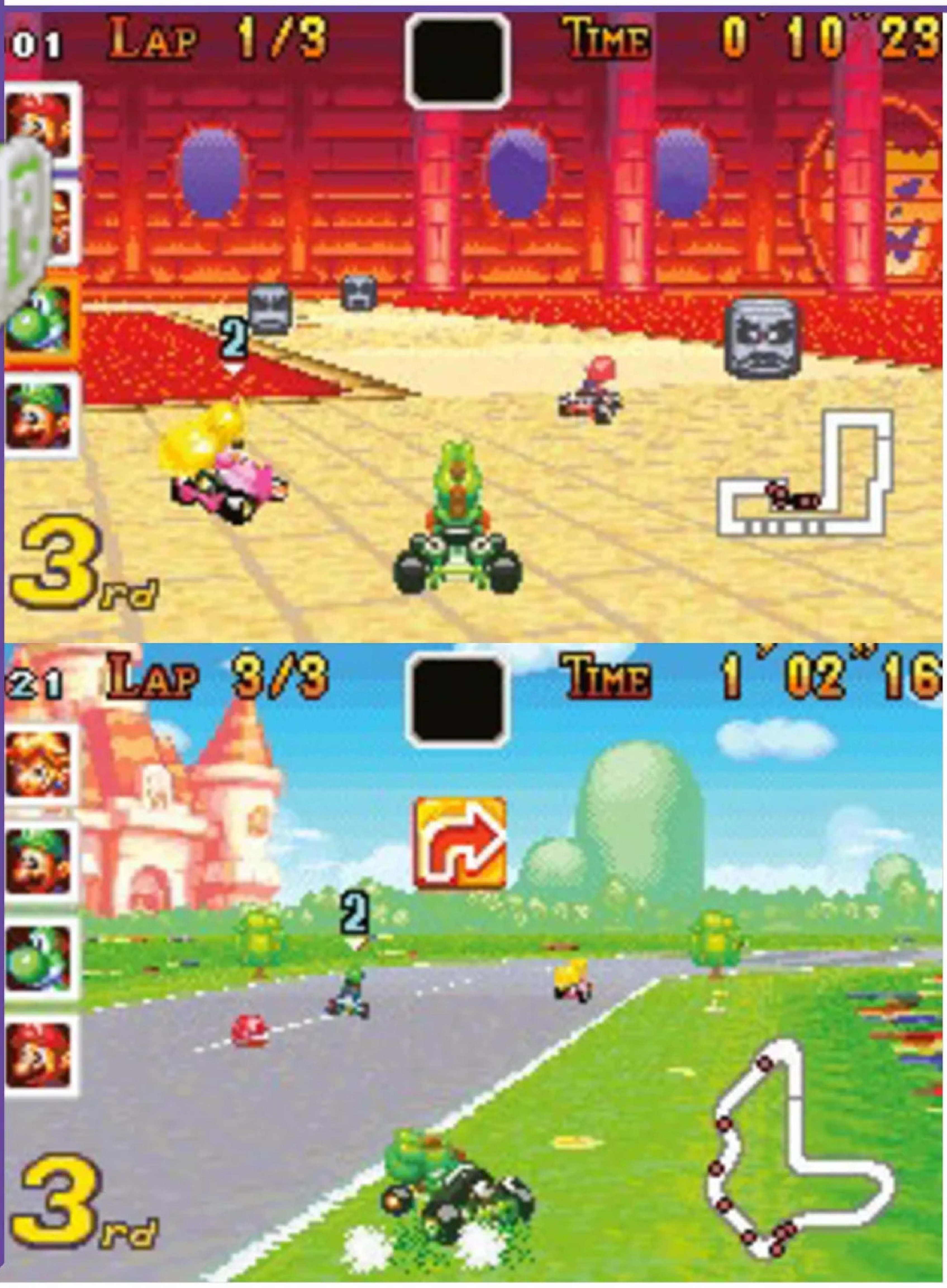
3 Mario Kart Super Circuit

■ DEVELOPER: **Intelligent Systems** ■ GENRE: **Racing** ■ YEAR: **2001**

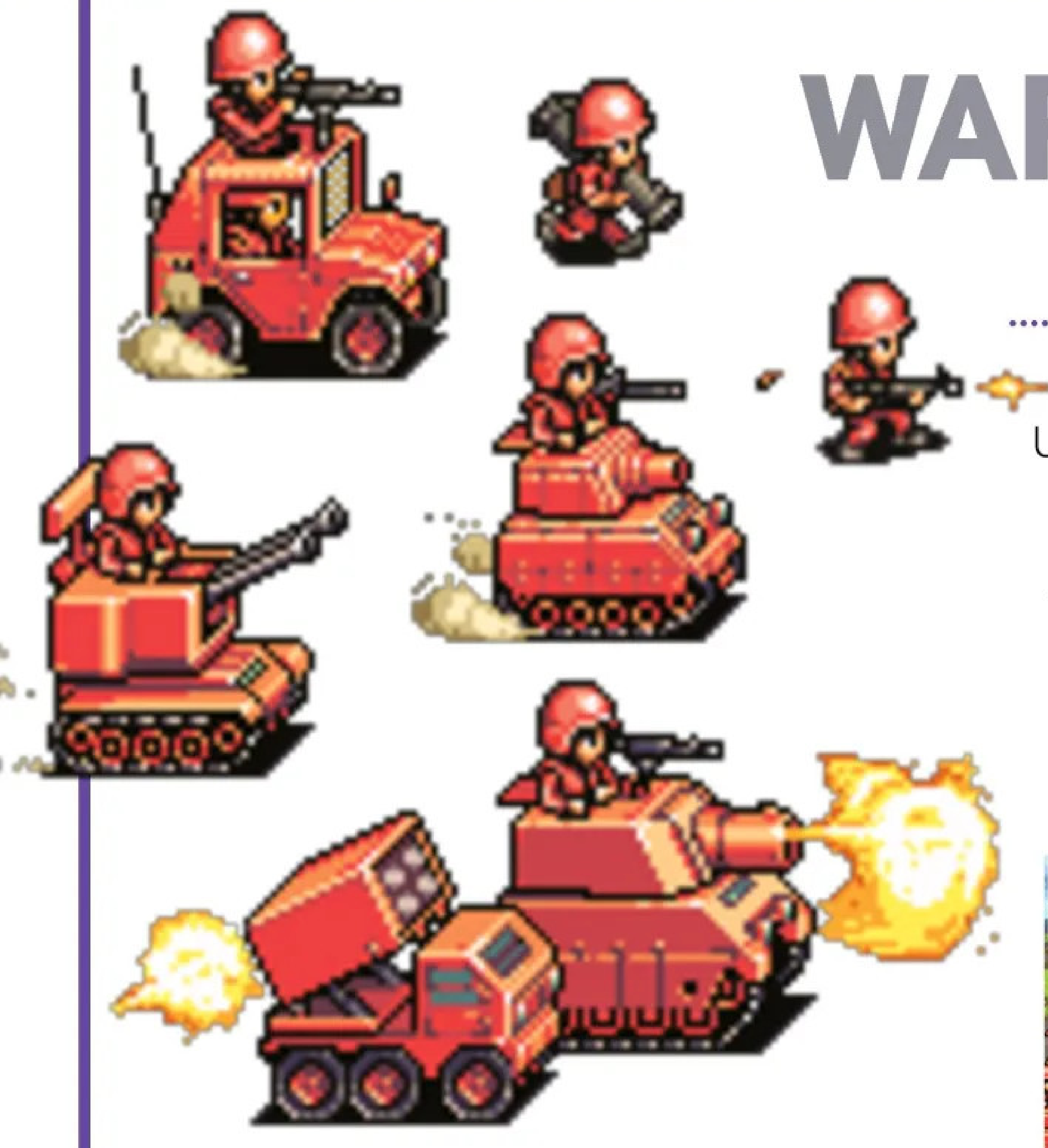
When *Super Mario Kart* first graced our consoles in 1992, no home console was capable of anything like the rotating racetracks it displayed. Less than a decade later, the flagship technique best known as Mode 7 was positively retro, swept aside by the full-3D visuals of the 32-bit and 64-bit consoles. With a bit of programming wizardry, the GBA was capable of polygonal magic too – yet *Mario Kart Super Circuit* stuck resolutely to the flat racetracks of its SNES forebear.

That appeal to retro sensibilities was key to the appeal of *Mario Kart Super Circuit*. The original game is one of the most beloved racers of all time, and there was far more value in tapping into that than making a cut-back 3D racer. *Mario Kart Super Circuit* doesn't include any new items, and the character roster is carried over from *Mario Kart 64*. What it does have is 20 new racetracks to conquer, each of which is designed to the standards of the original game. Once you're done with those, you can revisit the 20 tracks from *Super Mario Kart* as well.

Mario Kart Super Circuit didn't need to reinvent the wheel, and doesn't. It just provides a whole bunch of new content for a formula that worked very well to begin with, and does so in a package you can fit in your jeans. The Game Boy Advance has a superb reputation for games that play to and build upon your nostalgia, and *Mario Kart Super Circuit* is one of the reasons why.



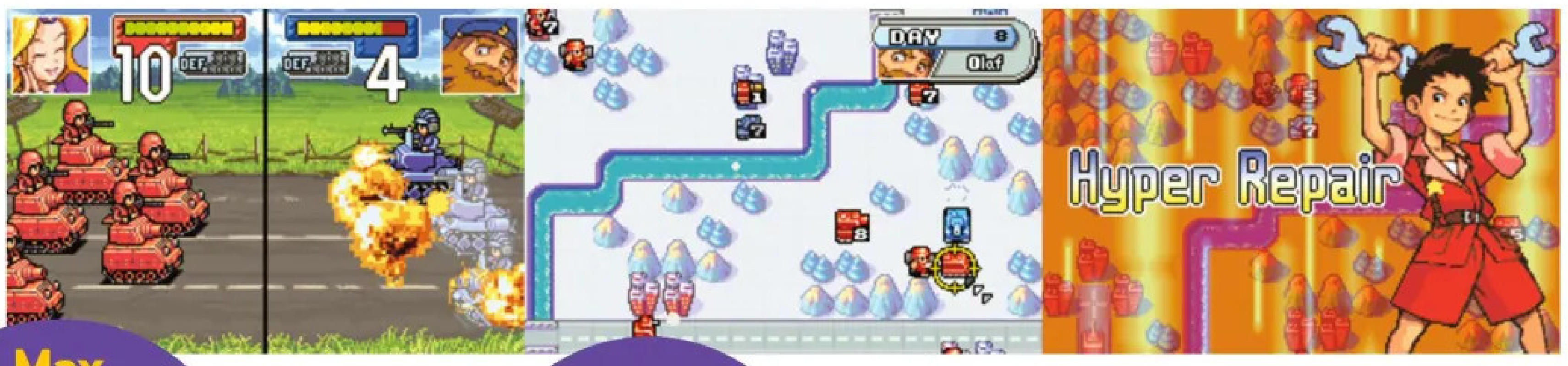
WAR HAS NEVER BEEN **SO CUTE**

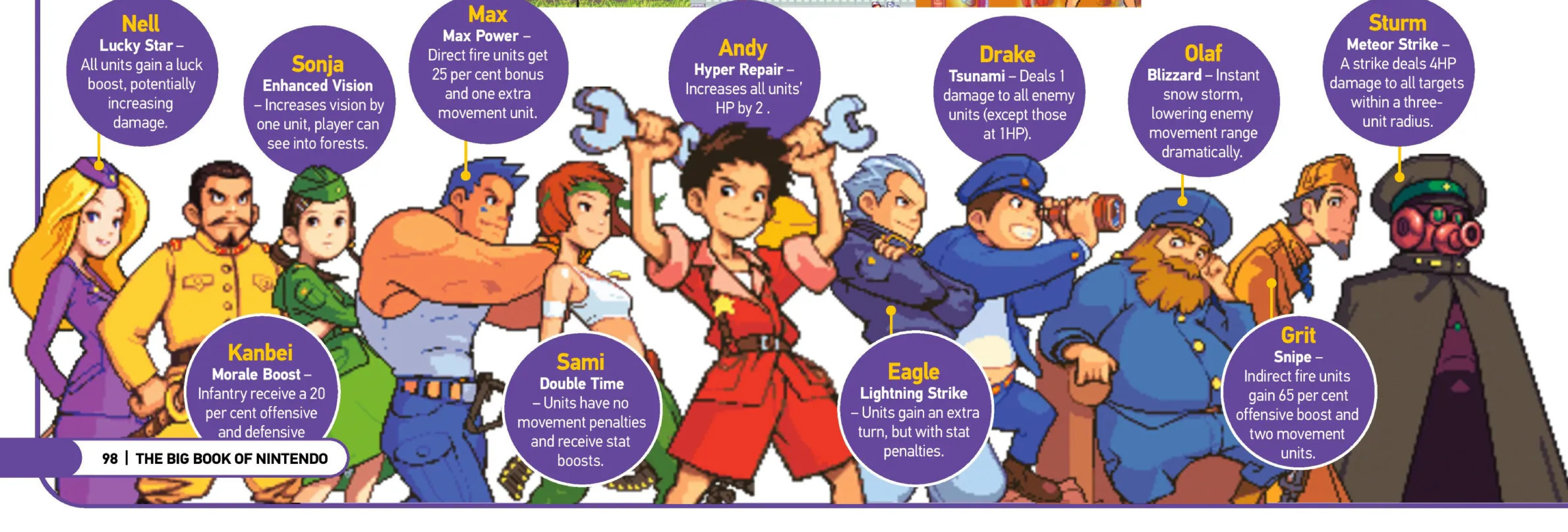


2 Advance Wars

■ DEVELOPER: **Intelligent Systems** ■ GENRE: **Strategy** ■ YEAR: **2001**

Up until the launch of the Game Boy Advance, a lot of Intelligent Systems' excellent work in the turn-based strategy genre was unfamiliar to most players outside of Japan – there were six *Wars* games prior to *Advance Wars*. Still, the developer quickly made up for lost time. *Advance Wars*' dinky-looking tanks and cutesy soldiers provided a universal appeal, with accessible yet deep strategic gameplay to back it up. With a lengthy single-player campaign, excellent multiplayer component and a range of commanding officers, each with their own unique powers to utilise, *Advance Wars* will keep your inner strategic general satisfied for ages. You can read about the COs and their powers below.





Nell
Lucky Star – All units gain a luck boost, potentially increasing damage.

Sonja
Enhanced Vision – Increases vision by one unit, player can see into forests.

Max
Max Power – Direct fire units get 25 per cent bonus and one extra movement unit.

Andy
Hyper Repair – Increases all units' HP by 2 .

Drake
Tsunami – Deals 1 damage to all enemy units (except those at 1HP).

Olaf
Blizzard – Instant snow storm, lowering enemy movement range dramatically.

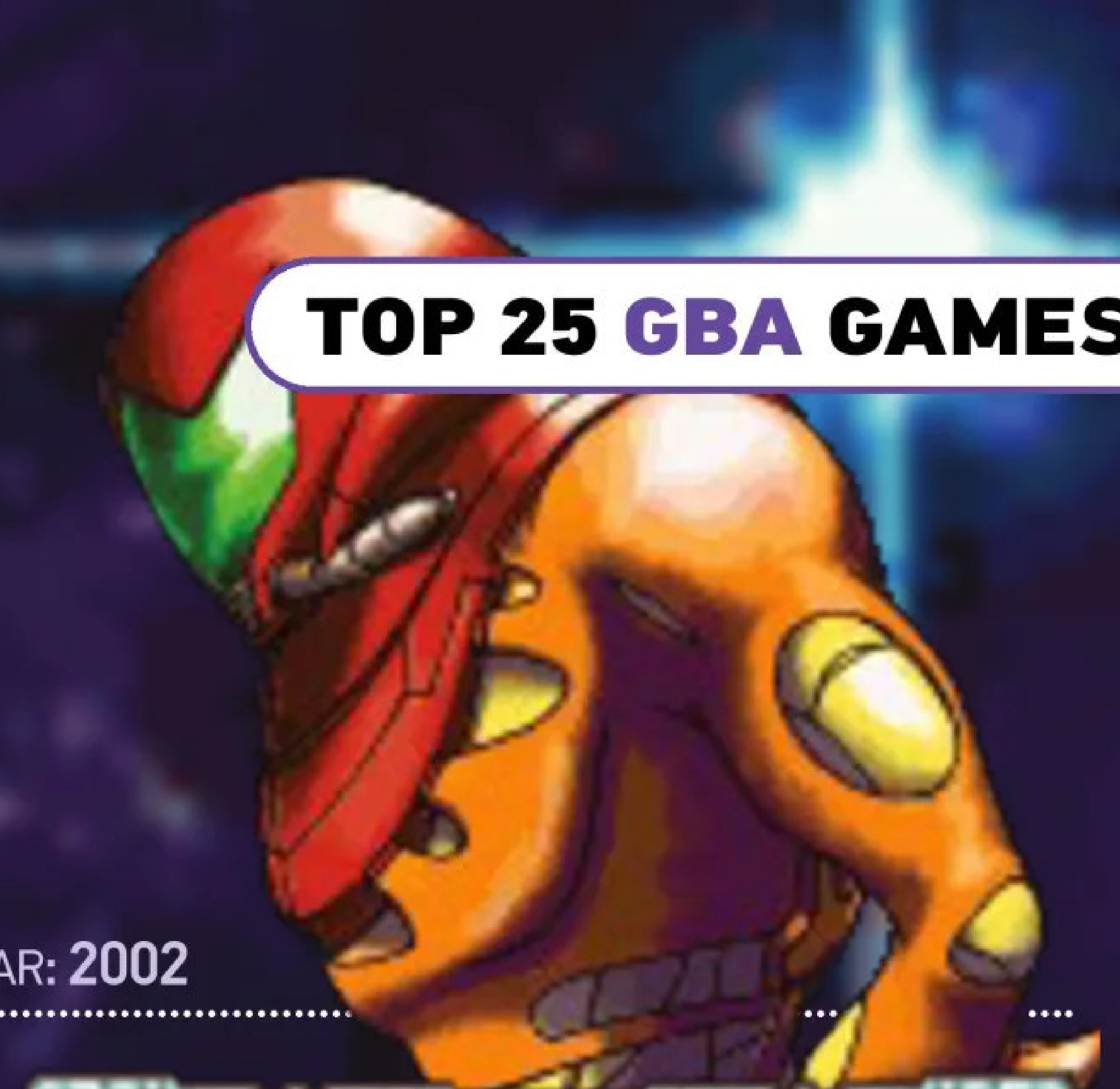
Sturm
Meteor Strike – A strike deals 4HP damage to all targets within a three-unit radius.

Kanbei
Morale Boost – Infantry receive a 20 per cent offensive and defensive

Sami
Double Time – Units have no movement penalties and receive stat boosts.

Eagle
Lightning Strike – Units gain an extra turn, but with stat penalties.

Grit
Snipe – Indirect fire units gain 65 per cent offensive boost and two movement units.



FUSING OLD AND NEW

1 Metroid Fusion

■DEVELOPER: **Nintendo R&D1** ■GENRE: **Action-adventure** ■YEAR: **2002**

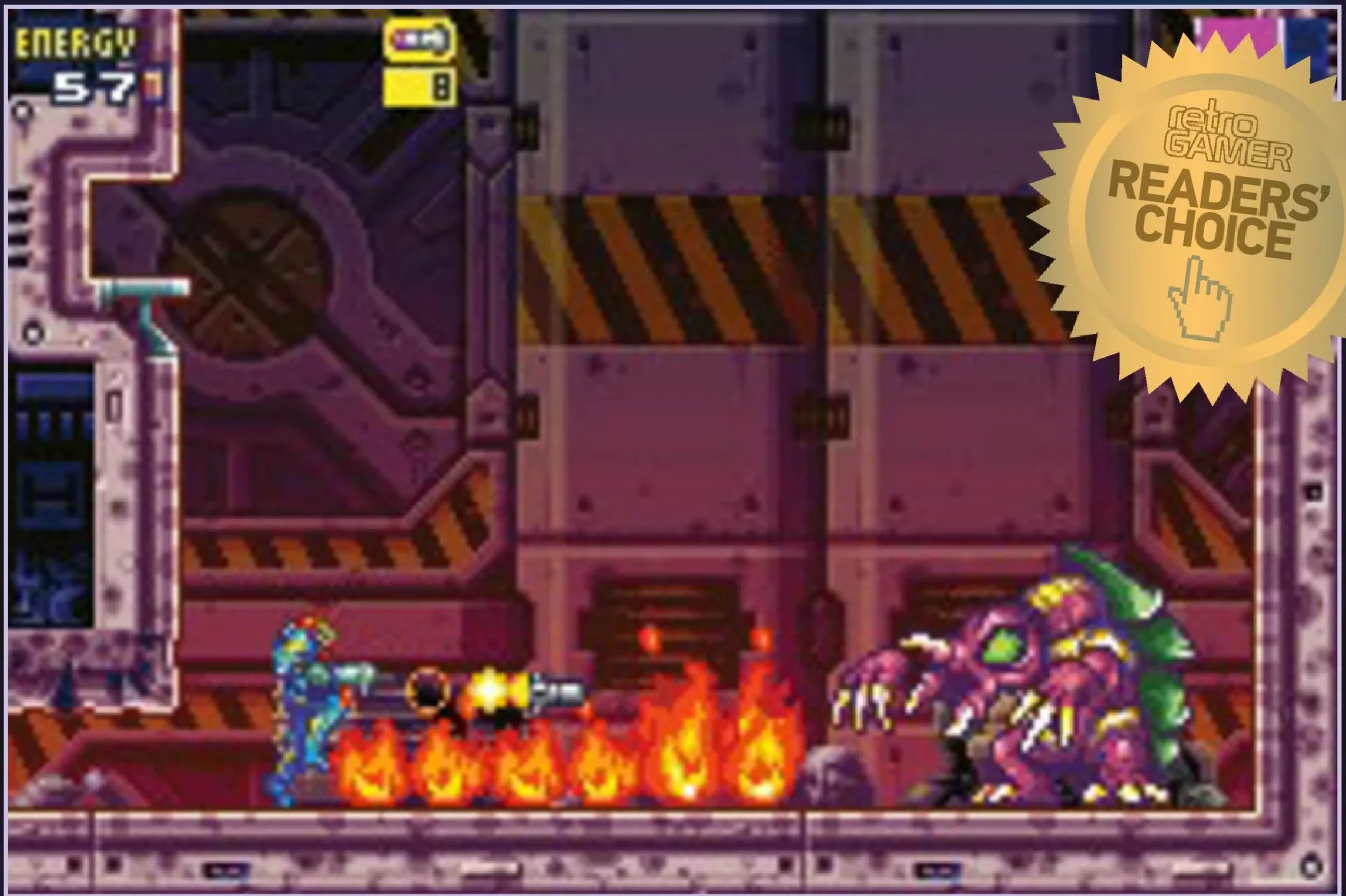
The Game Boy Advance was one of the very first platforms to recognise and cater to nostalgic gamers in a big way, and this list is all the evidence you need to support that. Conversions and remakes of Eighties and Nineties games make up a fifth of the list, and that's a trend that continues right through the voting – for example, games that narrowly missed the cut include the likes of *Doom* and *The Legend Of Zelda: A Link To The Past*. But the true appeal of the Game Boy Advance wasn't that it housed a fine retro library in your pocket – it was the fact that it offered a home to classic 2D game designs that had become lost in the home console world.

That's why *Metroid Fusion* is so brilliant. After Samus Aran's eight-year absence as a star character, Nintendo could have provided us with a simple conversion of *Super Metroid* and most people would have been happy. Instead, the developer went one better and delivered a true successor, a brand-new adventure created with the design sensibilities of the SNES classic.

Like its predecessors, *Metroid Fusion* is an exploratory platformer that places Samus alone in a hostile environment. The Biologic Space Laboratories research station has been overrun by the deadly X parasite, and Samus has to investigate what's happening and ultimately stop it. Of course, since she's lost all of her powers due to her own X infection, Samus must reacquire powers like the missiles and iconic Morph Ball in order to progress through the station.

Metroid Fusion doesn't allow for quite the same level of freedom and sequence-breaking as its predecessors, but the trade-off is a stronger narrative and a much more impressive atmosphere. In a large part, this can be credited to the SA-X, a ruthless and intelligent foe that stalks Samus throughout the game. While all of the encounters with it are scripted events, playing through for the first time and not knowing when you're going to be ambushed by a foe that can outgun you makes for some very real tension.

There's no area that *Metroid Fusion* doesn't excel in. It looks lovely, with vibrant colours and detailed sprites. It sounds great, with ominous music accompanying your every step. It plays superbly, with tight controls and excellent stage design. It wasn't necessarily the game we expected to top this list, but there's no denying that it deserves to.



ICONIC VILLAIN: SA-X

We extrapolate why Metroid Fusion's antagonist is so iconic

STAGE 1

■ The SA-X was formed from parts of Samus Aran's old Power Suit, which had been surgically removed and sent to quarantine after both she and the suit had been infected with the X parasite.

STAGE 2

■ The X parasites can obtain the physical appearance, intelligence and memories of their hosts, and even mimic technology. Thus, the SA-X is essentially a clone of a fully-powered Samus Aran, with all of her characteristic abilities and weaponry.

STAGE 3

■ Metroids are the natural predators of X parasites. Samus was cured with a treatment made from Metroid cells, and she's taken on some of its biological traits – most notably, weakness to the cold. The SA-X can detect this and will fight you with the Ice Beam.

STAGE 4

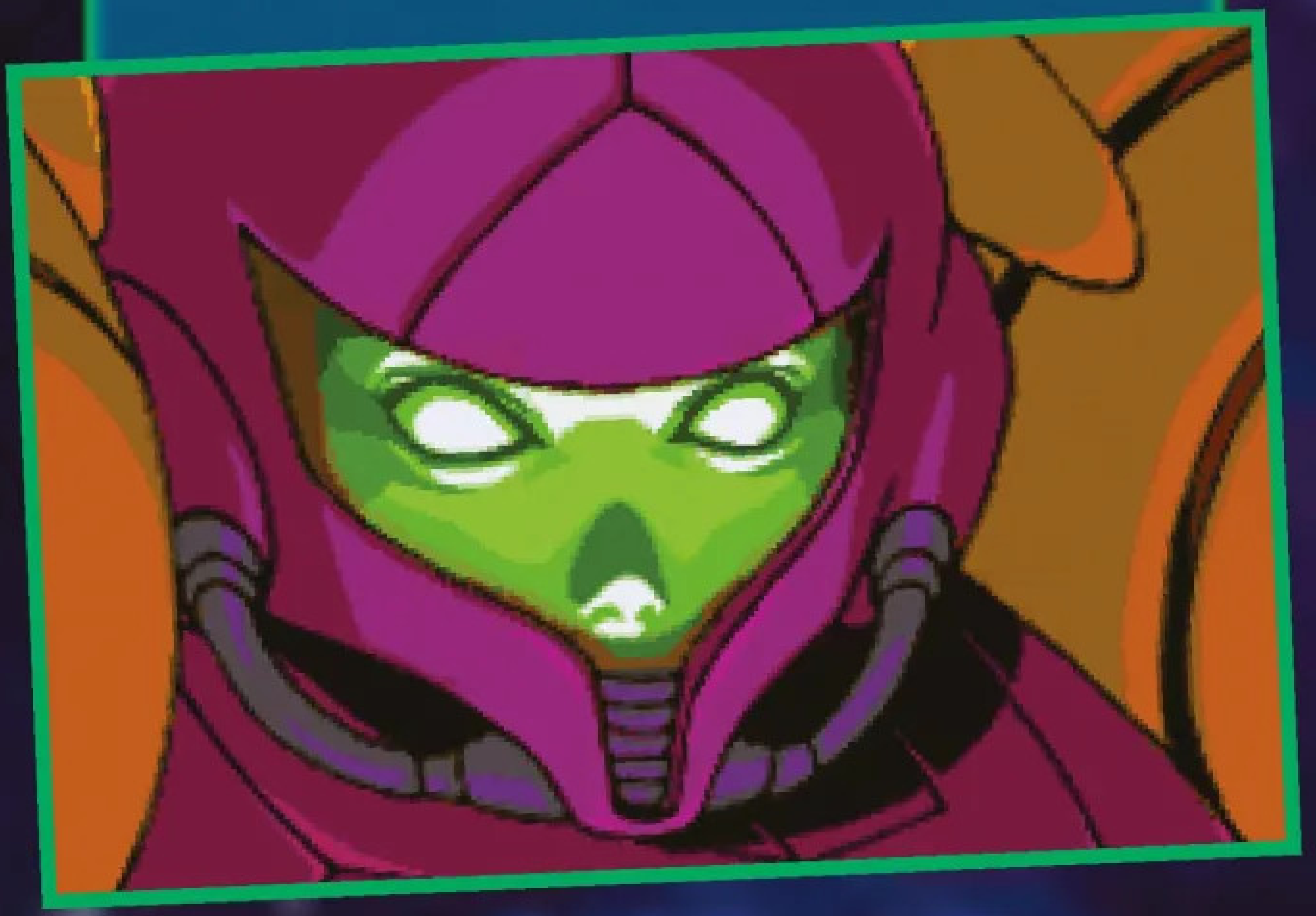
■ During your initial encounters with the SA-X, you'll be no match for it – you'll either have to hide in an inaccessible area or simply run like hell, dodging and weaving through the environment as it unleashes the full force of Samus' arsenal.

STAGE 5

■ While the SA-X attacks in the same places during every game, there's often basically no warning that it's coming, so you feel truly hunted by this creature. As soon as you spot it, it's time to take action or you are dead meat.

STAGE 6

■ X parasites can reproduce asexually, and that means that SA-X isn't necessarily a singular foe. There could be two, 20, 200 or even more – and if a single one escapes the research station, it'll kick off an enormous galactic plague. Good luck!



NINTENDO
GAMECUBE
Nint

NINTENDO GAMECUBE

Damien McFerran takes a fond look back at the system which faced a huge struggle against the PlayStation 2 and Xbox but established the foundations for Nintendo's juggernaut, the Wii

Nintendo's standing in the videogame industry had taken something of a knock when the company began work on the GameCube, especially when compared to its glory days during the late Eighties and early Nineties. Following the runaway success of both the NES and SNES, the Nintendo 64 had been bullied into second place by the arrival of the PlayStation, a system which picked up where the SNES left off in the eyes of many players. The Nintendo 64 went on to sell 33 million units compared to the PlayStation's 102 million, forcing Nintendo to lick its wounds and ponder just what had gone so badly wrong.

Nintendo's insistence on sticking with cartridges had undoubtedly contributed to the N64's poor performance, and it was decided that the next console would use optical discs – a first for the company. Nintendo was also keen to ensure that its new system would offer decent power at a reasonable price, thereby attracting third-party support without driving away customers with a lofty price tag. To this end, Nintendo partnered with graphics hardware design company ArtX – led by Dr. Wei Yen, who was previously Silicon Graphics' head of Nintendo Operations and had worked on the N64 – and began development on 'Flipper', the graphics processor which would power Project Dolphin, the early codename for the GameCube. The CPU was the other piece of the puzzle, and Nintendo would team up with IBM for the GameCube's brain, codenamed 'Gekko'.

"Coming from working on the N64, when we first saw the GameCube we were impressed by the step up in power," says Phil Tossell, who worked at Rare – a studio which had a storied partnership with Nintendo – during this period. "The N64 was a limited machine, particularly with respect to the size and amount of textures you were able to use. At the same time we were wary of the shift from cartridge to disc. At the time we were working on *Dinosaur* ▶

▶ *Planet* – which would transition to the GameCube and become *Star Fox Adventures* – and that utilised a streaming world, so we knew that getting that to work with a disc setup was going to be a real challenge."

The GameCube arrived on store shelves towards the end of 2001 and was accompanied by three games in Japan and 12 in North America – none of which had Mario in them, although his sibling took the spotlight in the enjoyable *Luigi's Mansion*. This ghost-busting adventure may have been the title that true-blood Nintendo fans flocked to at launch, but it was Factor 5's excellent *Star Wars Rogue Squadron II: Rogue Leader* which truly sold the machine to the masses. It offered the most convincing replication of George Lucas' epic series yet seen in videogame form, allowing players to step into their very own X-wing and play out all of their childhood fantasies. The fact that a third-party studio was able to produce something so polished at launch was a testament to accessibility of the system. "On the whole, the GameCube was very enjoyable to develop for," says Phil. "The range of effects we were able to achieve due to the multi-stage configurable graphics pipeline was remarkable. This pipeline was like an N64 on steroids – N64 had two stages, the GameCube had 16, if memory serves me right – and was a precursor to the fully-programmable graphics cards that were appearing on PCs."

The console's controller was also unique. While it moved away from the three-pronged approach of N64 pad, the GameCube controller still offered innovations of its own. The large A button was easy to reach, while the shoulder buttons offered analogue and digital support; a slight push triggered the analogue input while depressing them fully activated the digital command. Nintendo also added a second analogue stick, the C-Stick, which would be primarily used for camera control. "Almost everybody at Rare loved the controller," Phil says. "It still rates as one of best controllers of all time for me."

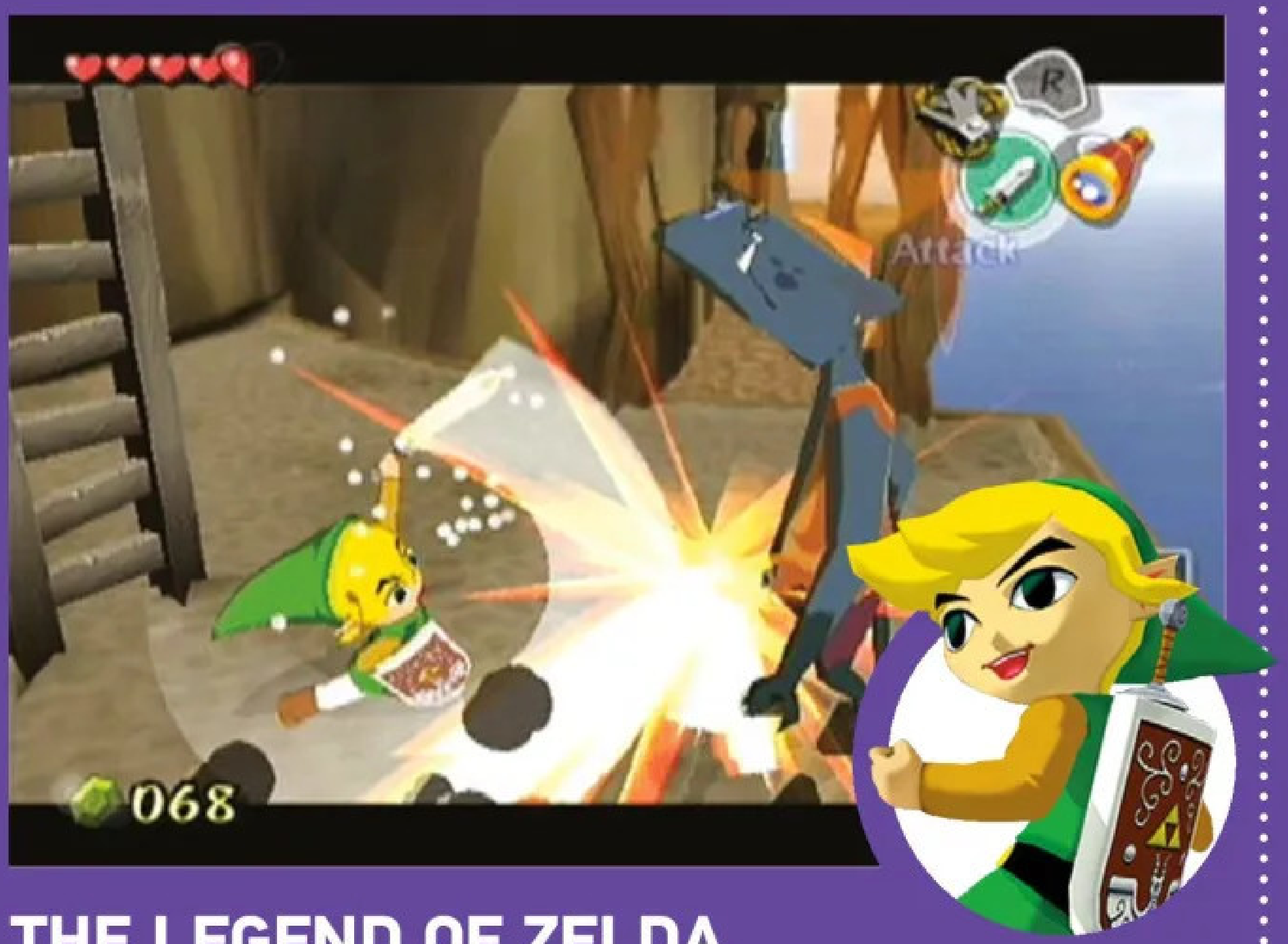
» *Resident Evil 4* was intended to be a GameCube-exclusive title, however it made an appearance on the PS2.

Nintendo was keen to leave no stone unturned when it came to designing the GameCube, but there were some limitations. "The downsides were that it was severely constrained on memory," Phil says. "It only had 24MB of main memory with 16MB of so-called audio memory. Although the GameCube supported texture compression it wasn't appropriate for all textures. Fortunately, Rare's artists were already very adept at making using of smaller textures to great effect as the N64 permitted only tiny textures by comparison. The other downside was the disc. It was pretty slow, in particular with the seek time, so it was necessary to spin it up in plenty of time for when the data would actually need to be delivered. This was particularly tricky for *Star Fox Adventures* where we had taken advantage of the near-instantaneous access and transfer speed of cartridge ROM. It became a favourite pastime of testers to try and find ways to bypass or defeat the triggers set up to begin loading of the next section of a level to see if they could get it to visibly pop in or not appear at all!"

Having cut its teeth in the world of 3D with the N64, Nintendo was able to embrace the third dimension more freely thanks to the powerful

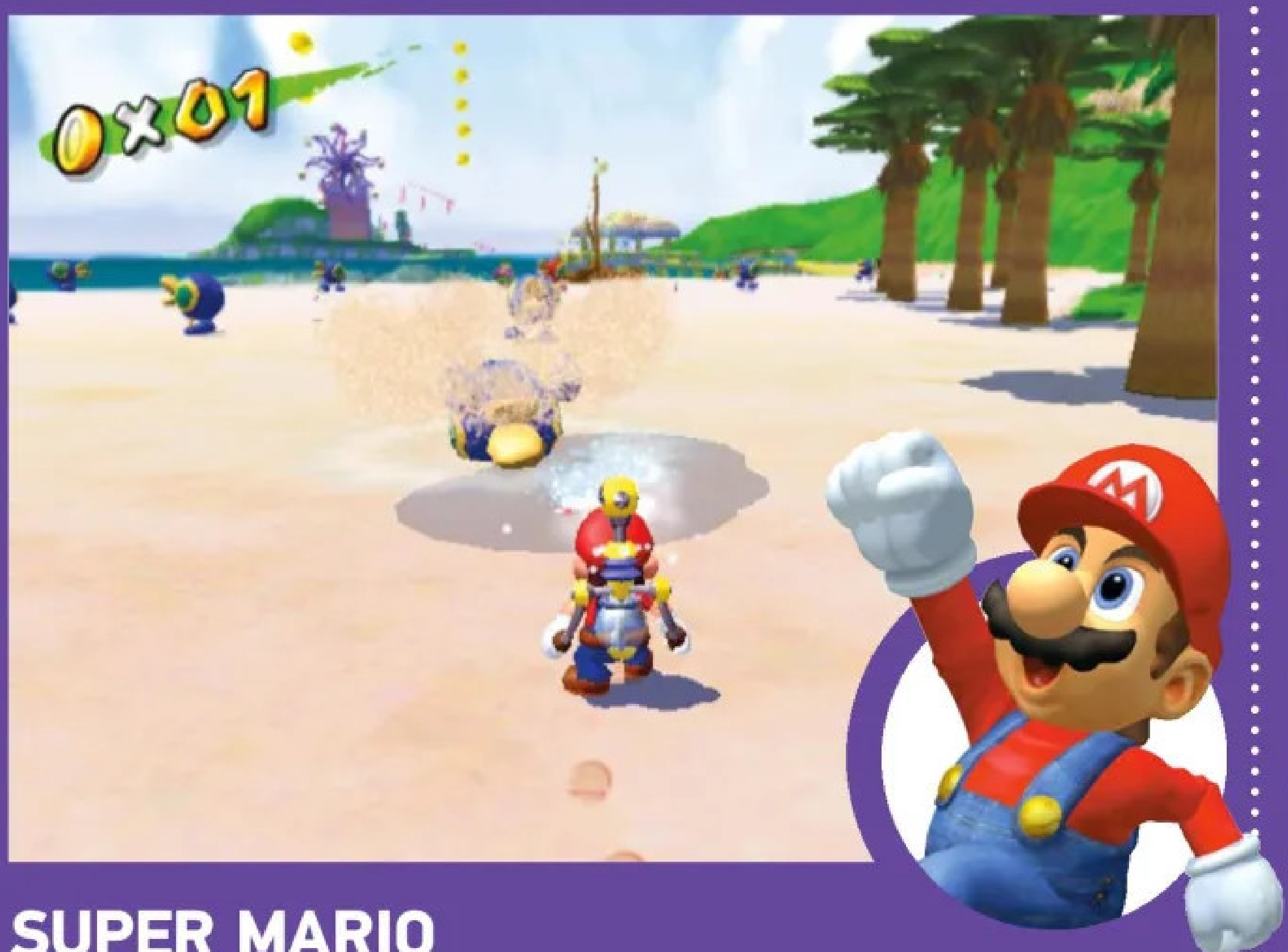
EVOLVING GAMES

The Nintendo franchises that benefitted from the Cube's extra power



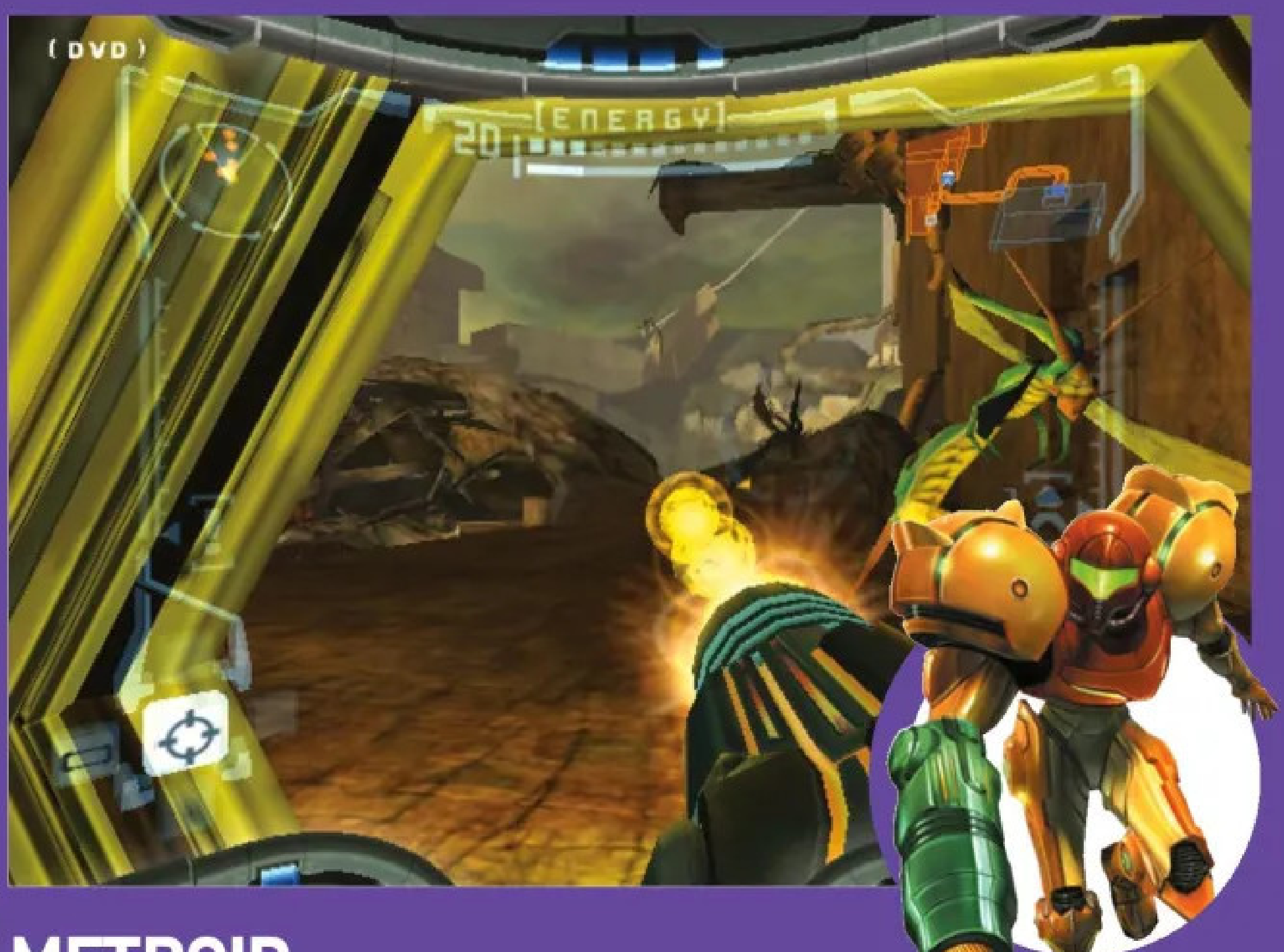
THE LEGEND OF ZELDA

■ The GameCube was home to not one but two full-3D *Zelda* titles, with *Wind Waker* proving to be the most divisive of the pair upon its initial announcement. The gorgeous cel-shaded cartoon visuals and massive, water-based overworld didn't find favour with hardcore fans, but ironically the game is perhaps better regarded today than *Twilight Princess*, its successor. Both have been ported to the Wii U as HD updates since.



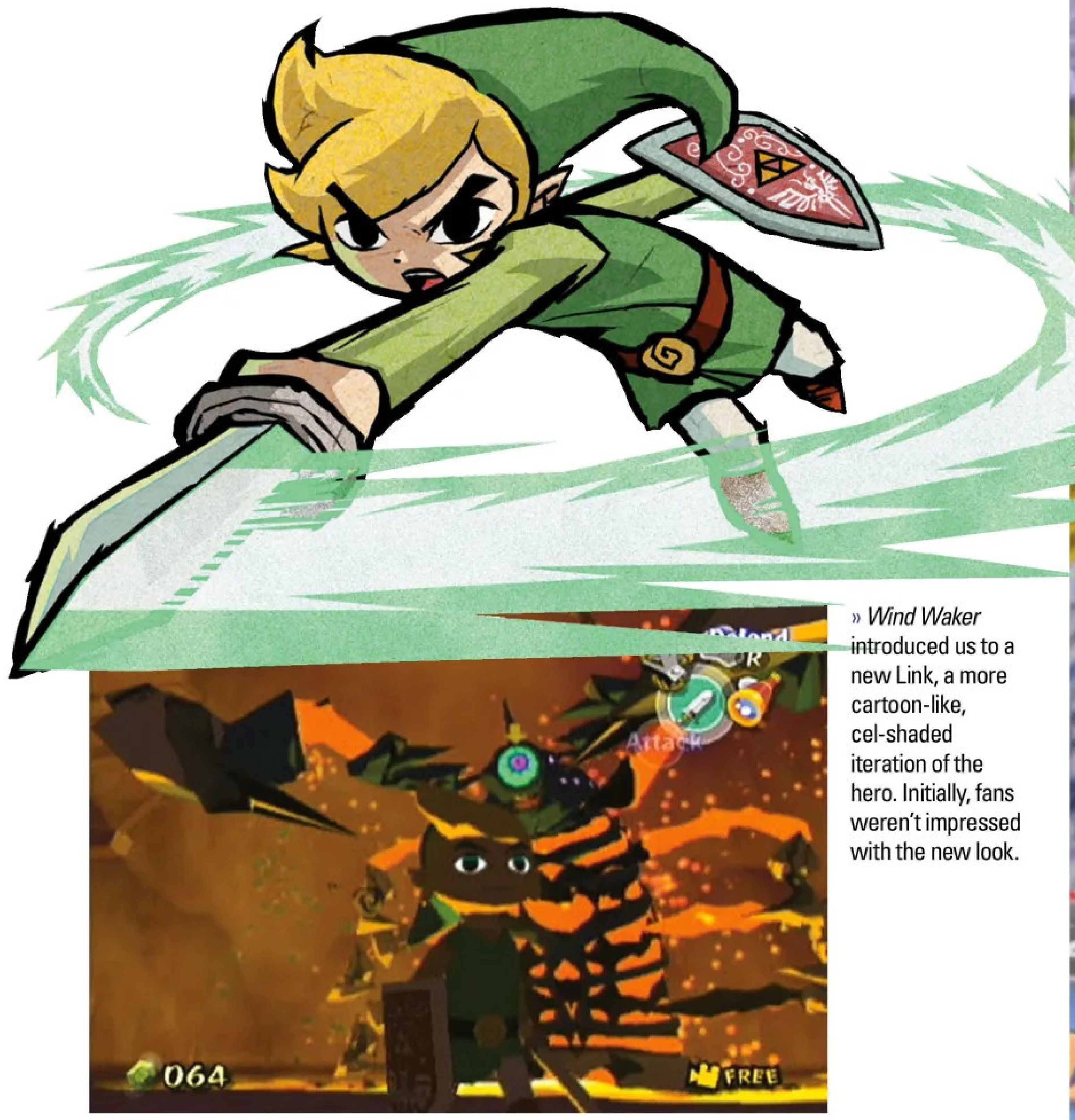
SUPER MARIO

■ *Super Mario Sunshine* wasn't the sequel to *Super Mario 64* that many had hoped for, but it harnessed the power of the GameCube to present a unique twist on the concept of Mario in three dimensions. Using his F.L.U.D.D. (Flash Liquidizer Ultra Dousing Device), Mario has to clean up the gorgeous Isle Delfino, which looks joyfully colourful, thanks to the sheer clout of Nintendo's sixth-generation powerhouse.



METROID

■ Coded by Retro Studios, *Metroid Prime* took the 2D template laid down by *Metroid* and *Super Metroid* but brought it into the third dimension, adopting a first-person view and placing focus on the scanning ability of Samus Aran's power suit. While the move away from 2D might have been brave, *Prime* was able to include the hallmarks of the series, such as inventive boss battles, the morph ball and the opportunity to explore your surroundings for secrets.

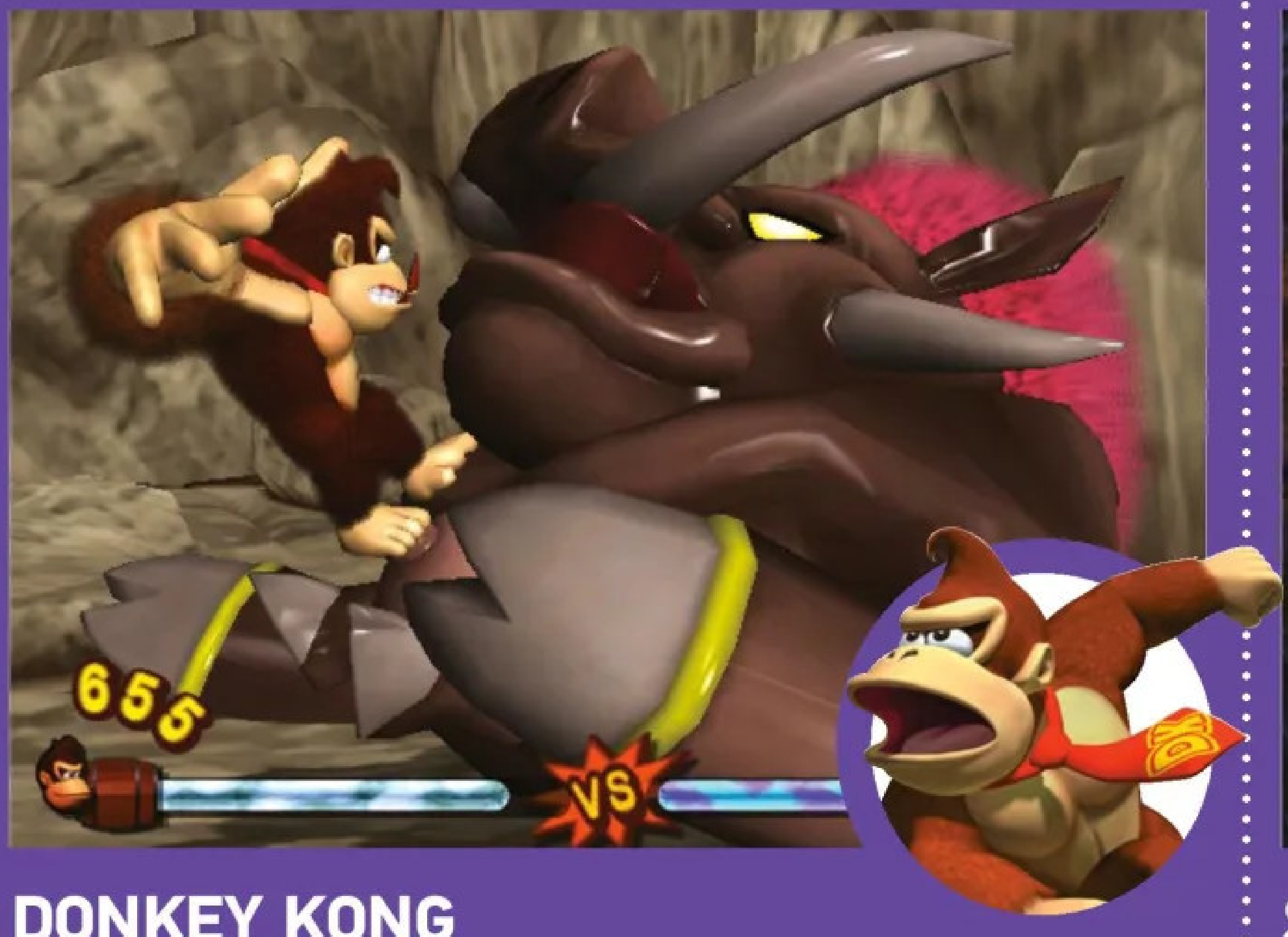


» *Wind Waker* introduced us to a new Link, a more cartoon-like, cel-shaded iteration of the hero. Initially, fans weren't impressed with the new look.

GameCube hardware, and some of the company's most accomplished games can be found on Nintendo's system. *Super Mario Sunshine* built on the fine work seen in *Super Mario 64* while expanding the iconic plumber's repertoire by gifting him with the 'F.L.U.D.D.' water shooter, while *The Legend Of Zelda: Wind Waker* gave us cel-shaded Link and a seemingly endless ocean world to explore. Elsewhere, *Pikmin* kickstarted an entirely new IP for the company and was to be Nintendo's take on the Real-Time Strategy genre. *Animal Crossing* was equally influential, delivering a 'life simulation' which was bursting with charm. Elsewhere, existing franchises such as *Mario Kart*, *Smash Bros.* and *Metroid* all benefitted from timely updates. *Metroid Prime* in particular was a significant release, taking the series into the realm of 3D and paving the way for a trilogy that scored highly in critical and commercial terms alike. ▶

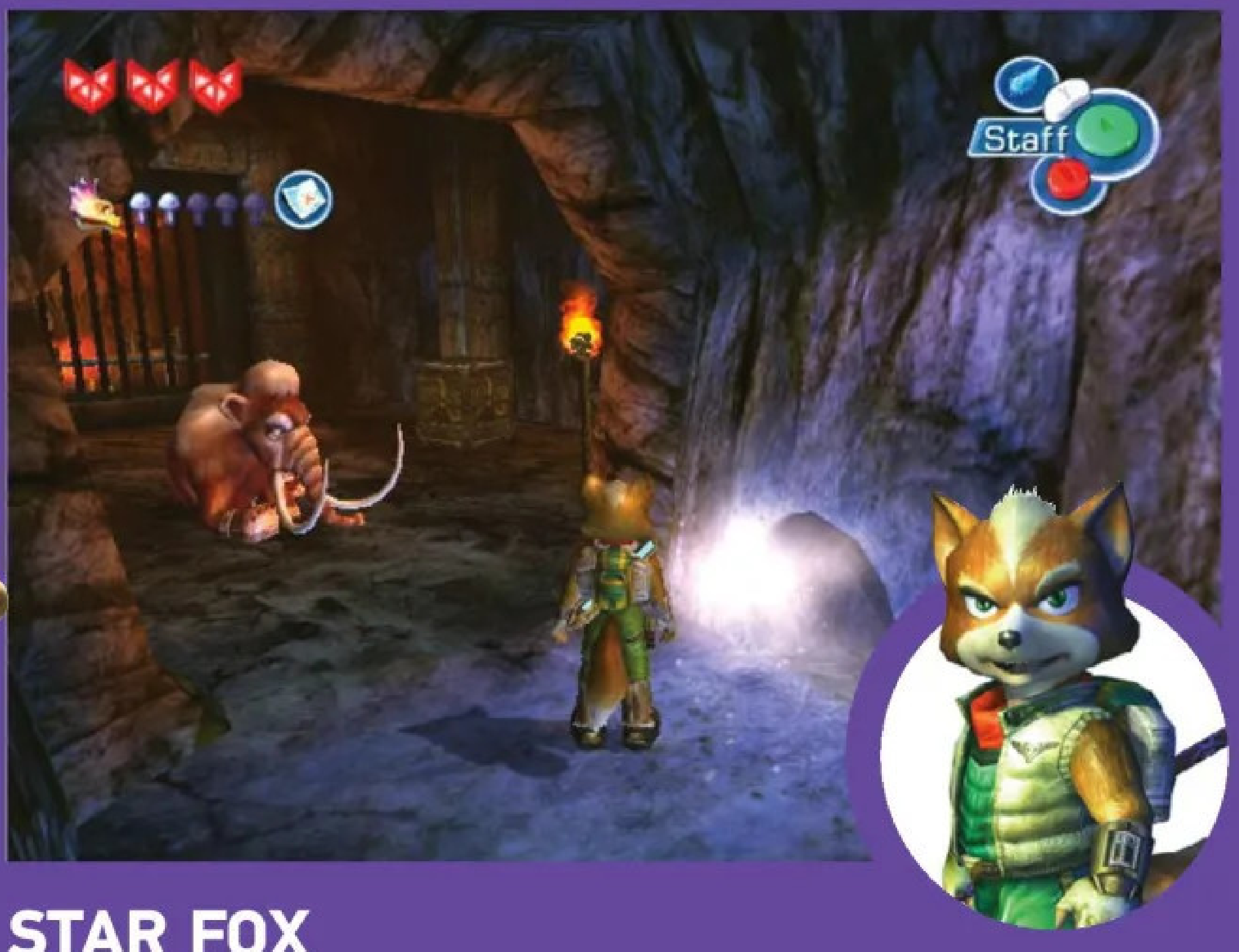
NINTENDO GAMECUBE
TIMESPLITTERS FUTURE PERFECT™
SOULCALIBUR™II
METROID™ PRIME
RESIDENT EVIL
SUPER SMASH
START/PAUSE

> "The range of effects we were able to achieve due to the multi-stage configurable graphics pipeline was remarkable"
>
> Phil Tossell



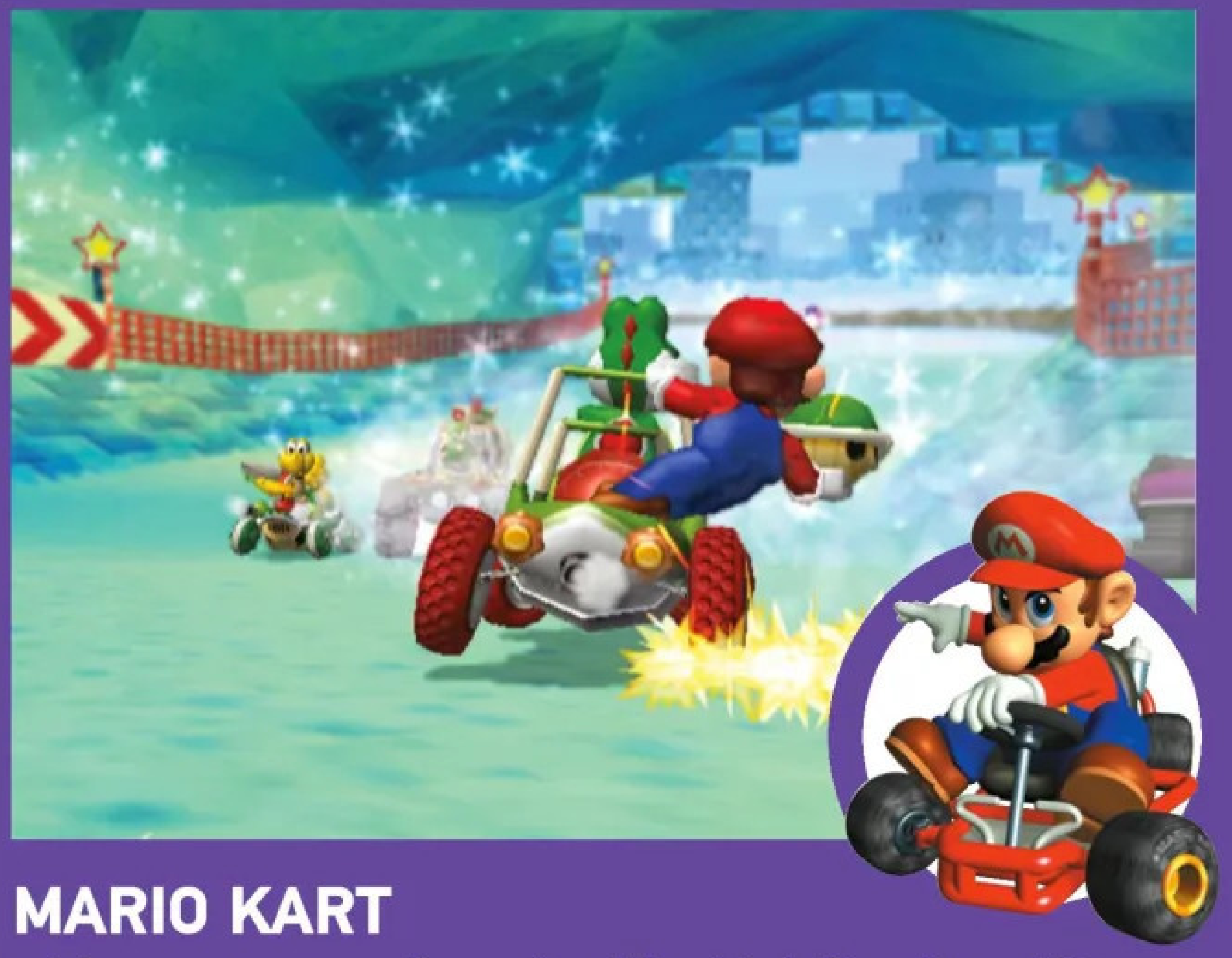
DONKEY KONG

■ While many of Nintendo's franchises were taken to new levels on the GameCube, *Donkey Kong* received the most surprising upgrade. Instead of offering a platformer in the vein of *Donkey Kong Country* or *Donkey Kong 64*, *Donkey Kong Jungle Beat* mixed platforming with music. It was compatible with the DK Bongos, which had launched alongside *Donkey Konga* in 2003. Progress was achieved by tapping the drums and clapping in time with the music.



STAR FOX

■ Fox McCloud appeared twice (not counting *Smash Bros.*) on the CameCube. *Star Fox Adventures* – the final game to be developed by Rare before it was purchased by Microsoft – boasted some amazing visuals despite not being a traditional *Star Fox* outing. It remains one of the most technically impressive GameCube games, while *Star Fox Assault* returned to a traditional *Star Fox* formula, with space battles and four-player split-screen local multiplayer.

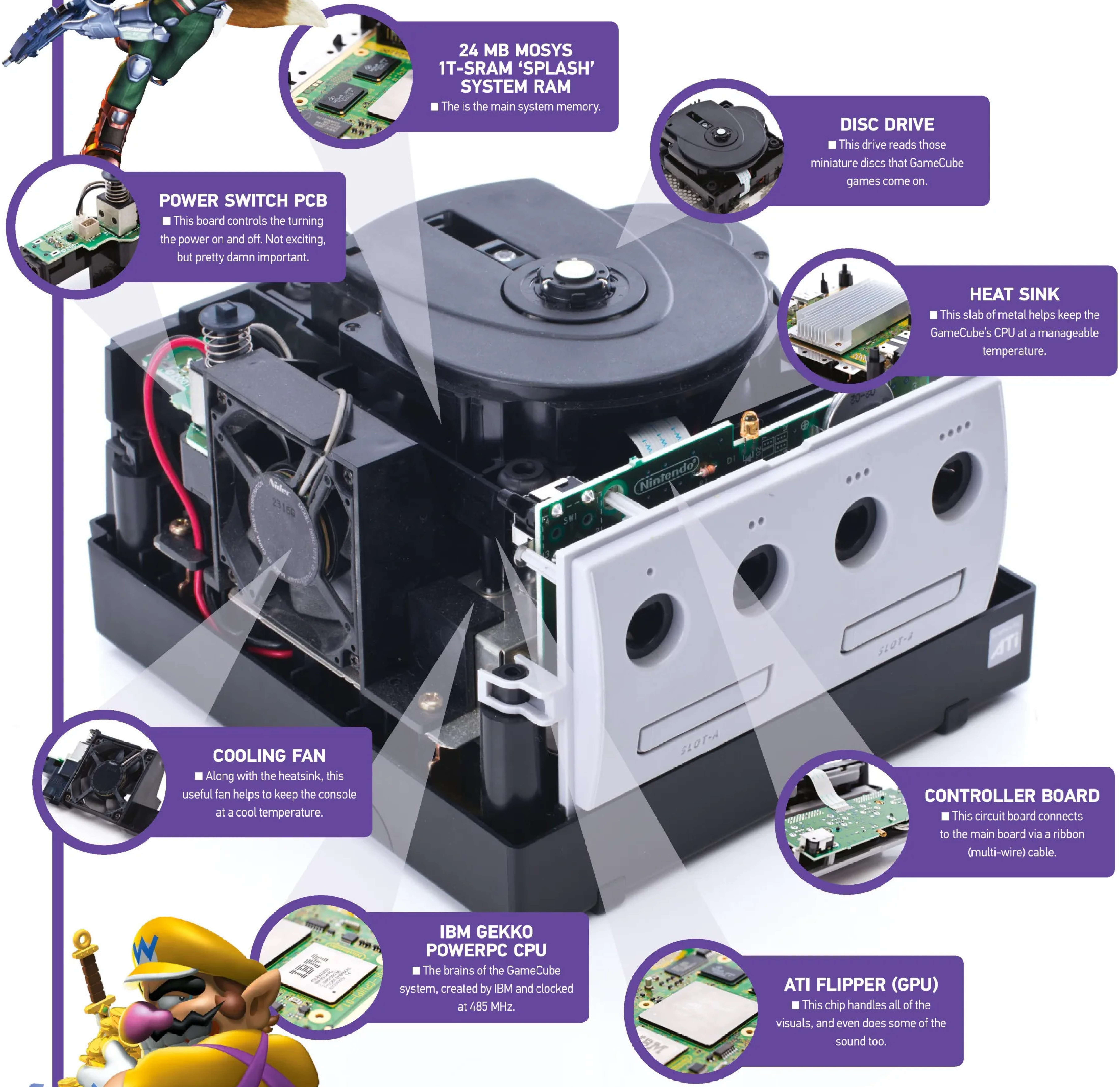


MARIO KART

■ Many gamers were disappointed that *Mario Kart 64* used 2D sprites, but Nintendo really pulled out all the stops when it came to making its GameCube sequel shine. The karts in *Mario Kart: Double Dash!!* – presented in full 3D this time – held two drivers at the same time, offering a co-op mode where one player drives and the player handles the weaponry and is able to perform a shove attack. A fun sequel with rubber banding being the only real bugbear.

INSIDE THE CUBE

We take a peek under the hood of the plucky little console



24 MB MOSYS 1T-SRAM 'SPLASH' SYSTEM RAM
■ The is the main system memory.

DISC DRIVE
■ This drive reads those miniature discs that GameCube games come on.

POWER SWITCH PCB
■ This board controls the turning the power on and off. Not exciting, but pretty damn important.

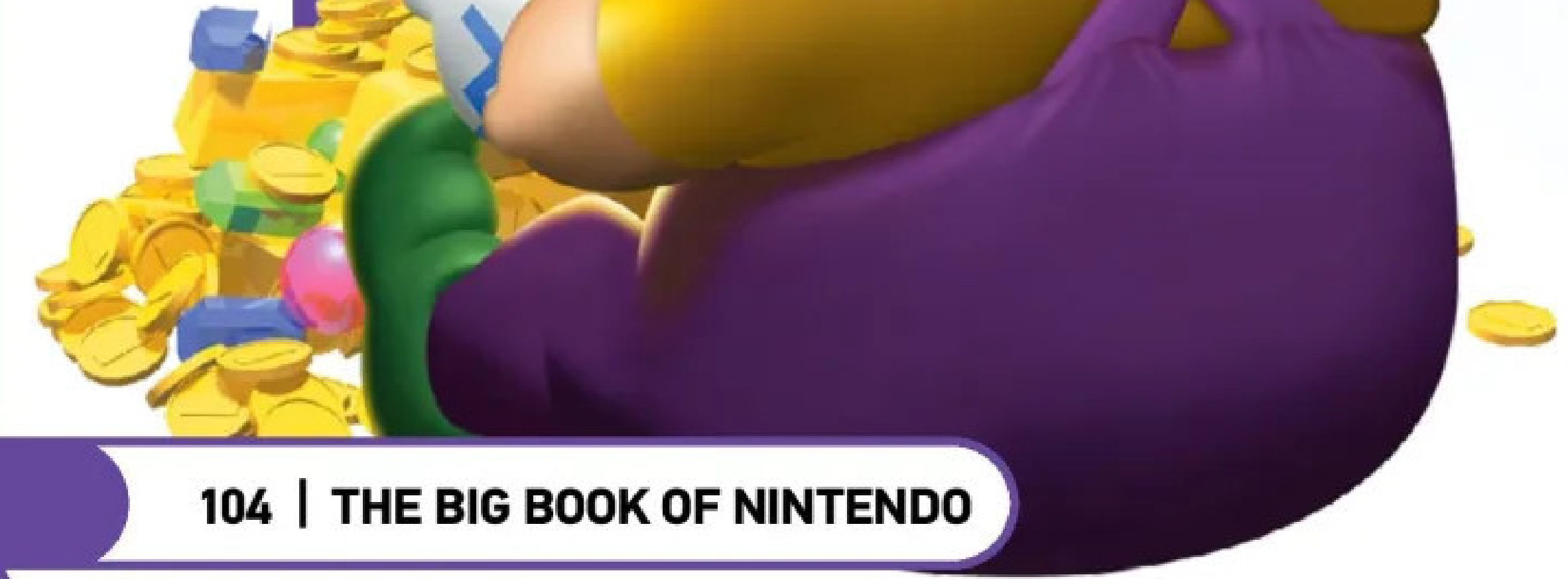
HEAT SINK
■ This slab of metal helps keep the GameCube's CPU at a manageable temperature.

COOLING FAN
■ Along with the heatsink, this useful fan helps to keep the console at a cool temperature.

CONTROLLER BOARD
■ This circuit board connects to the main board via a ribbon (multi-wire) cable.

IBM GEKKO POWERPC CPU
■ The brains of the GameCube system, created by IBM and clocked at 485 MHz.

ATI FLIPPER (GPU)
■ This chip handles all of the visuals, and even does some of the sound too.



NINTENDO
GAMECUBE
START/PAUSE

▶ Second-party studios, like Rare, were also put to work on the GameCube, but the company didn't get the special treatment many assume it did. "I think people labour under the misconception that Rare had a lot of privileged access, but in reality we didn't," reveals Phil. "By and large it mostly translated into getting things like dev kits and SDK access before anybody else, but as far as making use of the hardware in the best way, we had to do that ourselves. Nintendo's documentation up until the GameCube was pretty terrible, and I think actually that one of the unmentioned things about the GameCube was that for the first time the documentation was actually really good. This made it easier to fully make use of all the available features of the hardware."

Rare's output on the GameCube may have been curtailed by the fact that it was sold to Microsoft in 2002, but the firm still managed to dazzle with its final release. "We ported the *Dinosaur Planet* engine onto the GameCube," explains Tossell. "We really rapidly ported it over and started integrating as many new graphical features as we could in a really short space of time. We had this little demo scene with a SharpClaw character setup with really nice lighting, texturing and projected shadows. When we showed Nintendo they were so impressed that they started asking why their graphics didn't look as good! *Star Fox Adventures* is still regarded as looking great, even now. Effects like fur, grass, and reflective and refractive water still hold up. I had the opportunity to travel to Kyoto to meet Miyamoto-san and Imamura-san. I'm not really a person that gets starstruck but it was an experience that will stick with me; sitting in design meetings discussing with these guys about what we should do with *Star Fox Adventures* is not something I'll forget."

> **"One of the unmentioned things about the GameCube was that for the first time the documentation was actually really good"**
>
> Phil Tossell

» Mario was missing in the GameCube launch lineup, his brother took centre stage with *Luigi's Mansion* instead.

Not every studio got that kind of treatment, of course, but Nintendo made an effort to make third parties feel more at home on the GameCube than they did on the N64. Initially, third-party support for the GameCube was robust, with many companies porting over their PlayStation 2 releases to Nintendo's machine thanks to the parity in power. Sega was an early supporter, with titles like *Crazy Taxi*, *Super Monkey Ball* and *Sonic Adventure 2* all finding a receptive audience on the GameCube – ironic when you consider that the two companies had been bitter rivals during previous few console generations. Capcom was another firm which bet big on the GameCube, announcing a series of exclusives such as *Viewtiful Joe*, *P.N.03*, *Resident Evil 4* and *Killer 7*. Making the fourth mainline *Resident Evil* title a GameCube exclusive was a massive vote of confidence from the developer, and for a time it seemed like Nintendo had overcome the issue of third-party support which had blighted the N64.

» *F-Zero GX* was a blisteringly-fast racing game that offered arcade-quality experiences on Nintendo's humble console.

However, while Nintendo's own games sold well on the console, external publishers found less success. As it became apparent that the PlayStation 2 was to be the dominant system of the generation, support began to melt away. To make matters worse, Microsoft's Xbox – also launched in 2001 – had effectively stepped into second place by offering more raw power and functionality, pushing the GameCube even further down the pecking order. The only saving grace for Nintendo was that it remained second in its native Japan, where the Xbox had little impact.

The biggest blow would be Capcom's decision to backtrack on its promise to offer exclusive support to Nintendo's machine. *Viewtiful Joe* would gain rave reviews but only sold around 275,000 units, leading Capcom to port it to the PlayStation 2 in order to bolster profitability. The same would happen with *Resident Evil 4*, with Capcom bowing to fan pressure and confirming two months before it arrived on ▶

NINTENDO GAMECUBE

ESSENTIAL PERIPHERALS

GAME BOY PLAYER

■ One of the most appealing GameCube peripherals available for the system, the Game Boy Player bolted onto the bottom of the console and allow players to run their Game Boy Advance games on the machine.

HORI GAME BOY PLAYER CONTROLLER

■ Designed for use with the Game Boy Player and lacking many of the features of the standard pad, this retro peripheral works with many standard games, such as *Sonic Mega Collection*.

DK BONGOS

■ Compatible with the likes of *Donkey Konga*, *Donkey Konga 2*, *Donkey Konga 3* and *Donkey Kong Jungle Beat*, the DK Bongos controller has to rate as one of the most unusual, yet surprisingly functional, peripherals in the history of gaming.

MEMORY CARD

■ Unlike modern hard drive-based systems the GameCube required a memory card to save data. *Animal Crossing* and *Pokémon Colosseum* – two titles which have large save files – shipped with a dedicated memory card in the game box.

MICROPHONE

■ Compatible with *Mario Party 6*, *Mario Party 7*, *Karaoke Revolution Party*, *Odama* and *Densetsu No Quiz Ou Ketteisen*, the GameCube microphone allowed players to interact with games using their voice to issue commands.

WAVEBIRD

■ The WaveBird offered wireless gaming a generation before Sony and Microsoft. A small receiver plugs into the joypad port on the console, while the pad itself has an operational range of around 20 feet.

ASCII KEYBOARD CONTROLLER

■ This looks like someone has snapped a GameCube pad in two and stuck the halves onto either end of a keyboard. Despite this look, it was useful for inputting text in *Phantasy Star Online*.

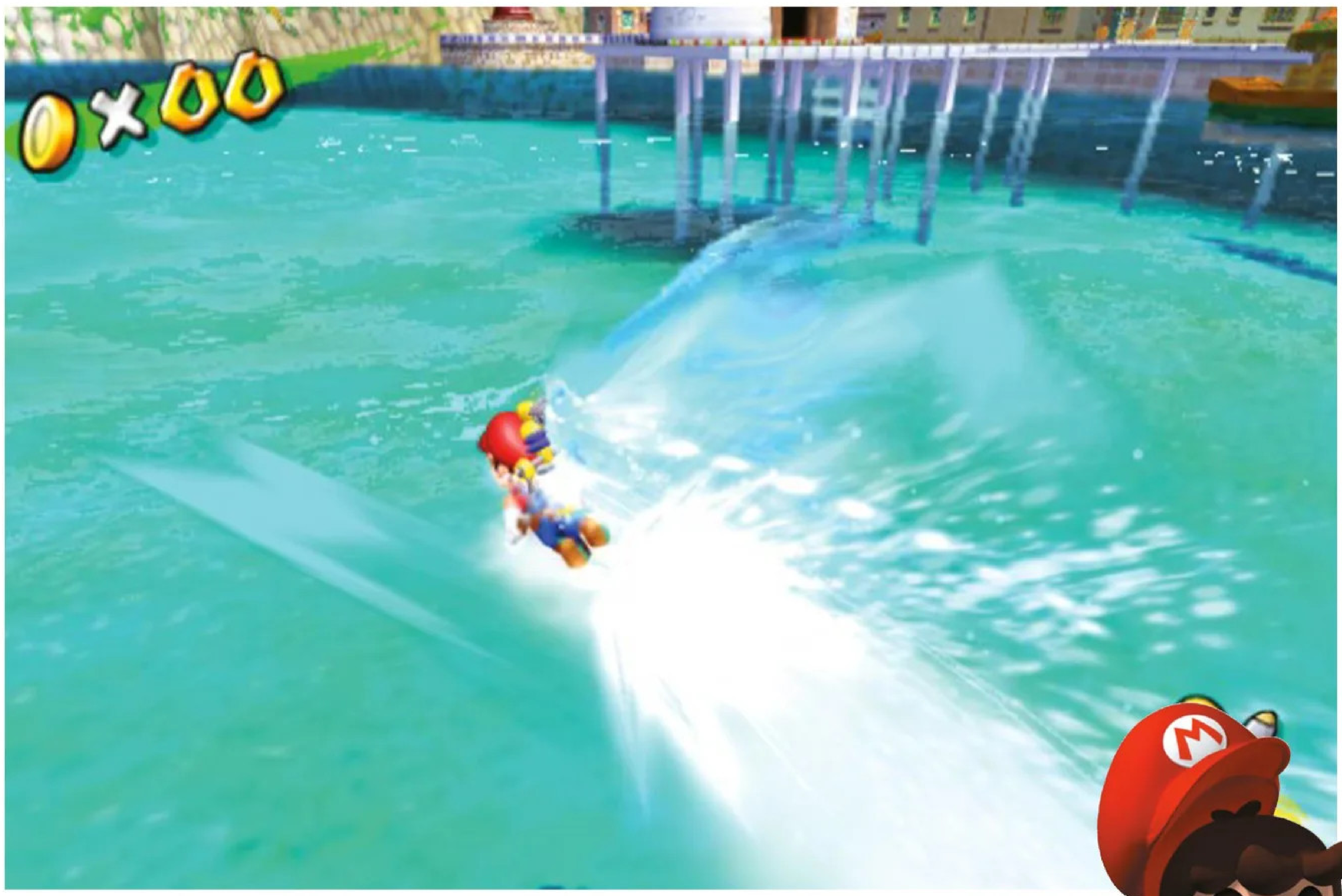
LINK CABLE

■ Many titles – such as *The Legend of Zelda: Four Swords Adventures* – allowed players to connect Game Boy Advance consoles to their GameCube systems to unlock additional features – such as second-screen gameplay.

4th
TIME 02'57"267
LAP 3/3
60 km/h

» *Mario Kart Double Dash!!* flaunted the GameCube's ability to kickstart any local-multiplayer session with ease.

▶ the GameCube that the survival horror outing would also be coming to Sony's console at a later date, an announcement which seriously undermined sales of the Nintendo version. In the end, the only title out of the fabled 'Capcom Five' to remain GameCube exclusive was *P.N.03* – the fifth game, *Dead Phoenix*, was cancelled in 2003 and Suda51's *Killer7* launched on the GameCube and PlayStation 2 at the same time. Capcom's commitment to the GameCube had been a massive shot in the arm for Nintendo and seemed to suggest that the console was more than capable of giving the PS2 a run for its money in terms of sales figures, but by going back on the deal, the publisher dealt a blow to the GameCube's fortunes, as well as its standing in the eyes of the games industry. PlayStation 2 owners had little reason to invest in Nintendo's system when titles like *Resident Evil 4* were coming to their console anyway, and this move robbed the GameCube of the momentum it crucially needed to attract more buyers.



» *Mario Sunshine* didn't hit the acclaim of *Mario 64*, but it was still a commendable, and great-looking, platformer.

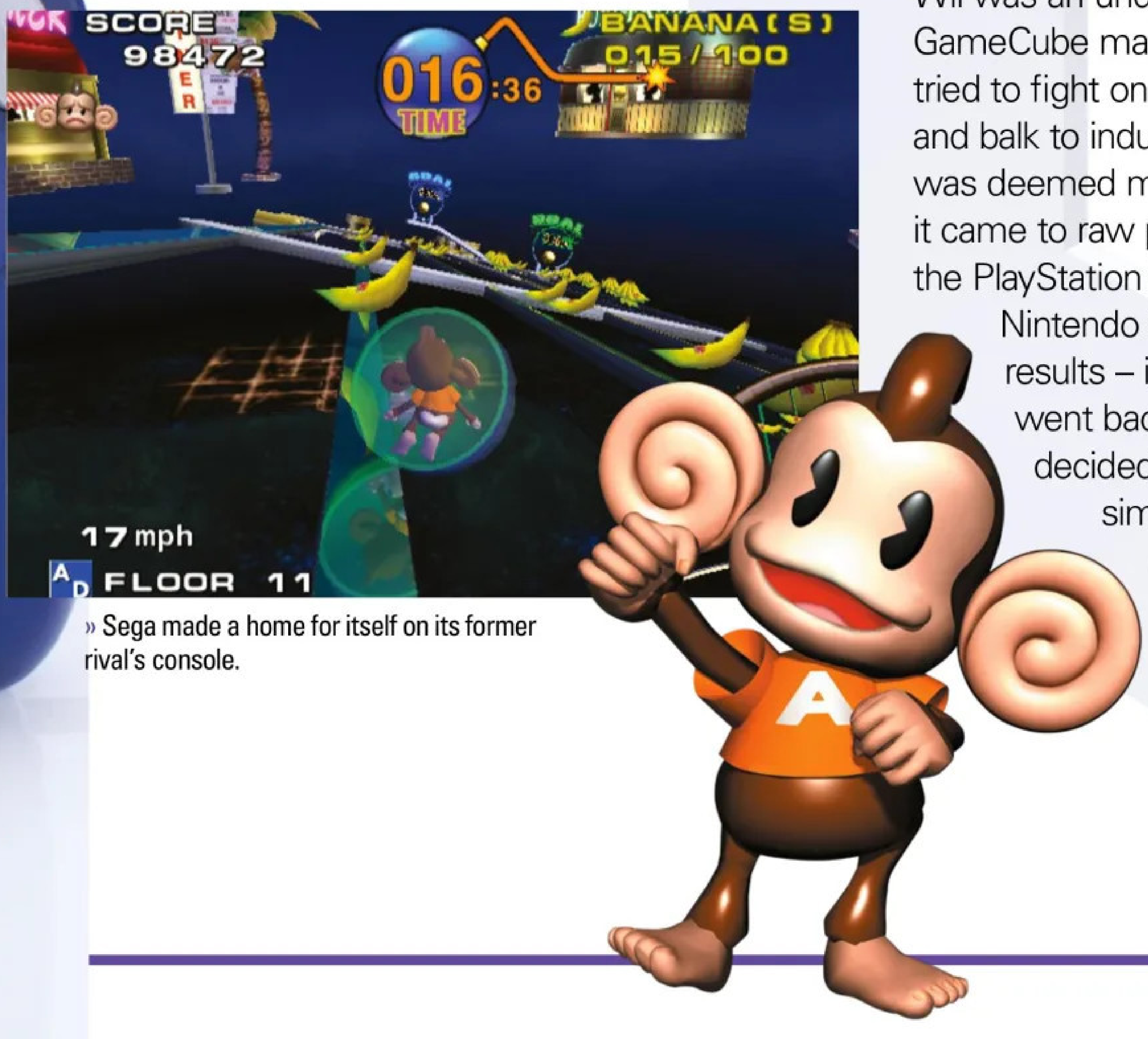
> **“Developers simply weren’t willing to spend the time and money to port their games over to the GameCube”**
> Phil Tossell

The GameCube’s eventual install base totalled around 22 million units, way behind the PlayStation 2’s 153 million and a shade behind the Xbox’s 24 million. As is often the case, a combination of factors contributed to its lacklustre performance, but some stand out more than others. “I believe the GameCube struggled because there just wasn’t the variety of content,” says Phil. “The Xbox and PS2 were largely comparable power-wise and many developers simply weren’t willing to spend the time and money to port their games over to the GameCube for the relatively small returns. Nintendo were left to support the console all on their own and it just wasn’t enough for a wider audience.”

While the GameCube appeared to be the next step in Nintendo’s downward trajectory – following the N64 which sold 33 million compared to the 49 million units of its forerunner, the SNES – it would lay down the framework for Nintendo’s most successful home console ever, and that is perhaps its most enduring legacy. Despite its innovative motion-sensing control system, 2005’s Wii was an evolution of the GameCube in purely technical terms, boasting the same core components. It would go on to sell over 100 million units, despite the fact that both the PS3 and Xbox 360 were significantly more powerful and offered impressive HD visuals.

While the GameCube failed to place Nintendo on top during its active life, its eye-catching design, extensive range of unique peripherals and – perhaps most important of all – its selection of excellent first-party Nintendo releases have ensured that in recent times it has enjoyed something of a modest resurgence among collectors. The console’s unique Japanese software packaging – which consists of a small, clear plastic case with a card sleeve – makes it incredibly appealing for import buyers, while the bright orange ‘Spice’ variant of the system and the super-exclusive Panasonic Q fetch respectable prices online. Overall, the GameCube is actually one of the more affordable retro systems when it comes to collecting, and it’s possible to purchase a console and a selection of good games for a price that won’t leave your wallet feeling too empty. Expect that to change over the next few years as its popularity increases, though.

The GameCube may have been overshadowed by its commercially-successful successor, but while the Wii was an underpowered, left-field champion, the GameCube marked the last time that Nintendo truly tried to fight on even technological terms with its rivals and balk to industry trends and offer something that was deemed more ‘safe’ and ‘mainstream’. When it came to raw power it was more than a match for the PlayStation 2 and Xbox, but this parity and the Nintendo name simply wasn’t enough to bring results – in terms of sales, at least. Nintendo went back to the drawing board for the Wii and decided to offer players an experience which simply couldn’t be replicated anywhere else, and that ethos has continued right up to the present day. *



» Sega made a home for itself on its former rival’s console.

WHAT MADE IT GREAT

UNIQUE DISCS

■ The proprietary optical discs were designed to deter piracy.

COMPACT CASING

■ The GameCube was refreshingly compact and even had a carry handle.

FOUR PORTS

■ The GameCube was perfect for parties, all you needed was the controllers.

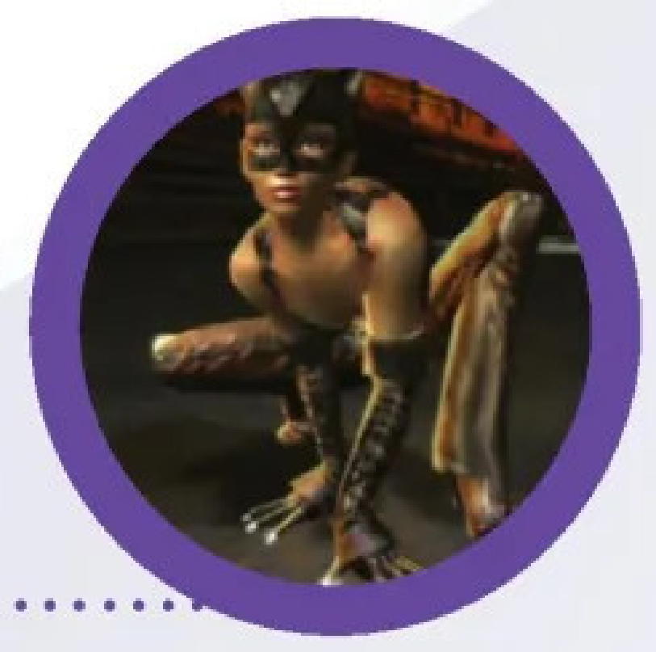
PARITY OF POWER

■ Despite its small size, the Cube could match its rivals.

UNIQUE COMPATIBILITY

■ You could play GBA, GBC and original Game Boy games via a special adapter.

WHERE IT FAILED



POOR THIRD-PARTY SUPPORT

■ Nintendo failed to secure consistent third-party deals.

SMALL DISC CAPACITY

■ 1.5GB games were modest, but the rivals had more space.

TOO FOCUSED ON THE FAMILY

■ The design was seen by some as too kid-friendly.

NOT ENOUGH ONLINE

■ It didn’t support the online console gaming scene enough.

NO INTERNAL STORAGE

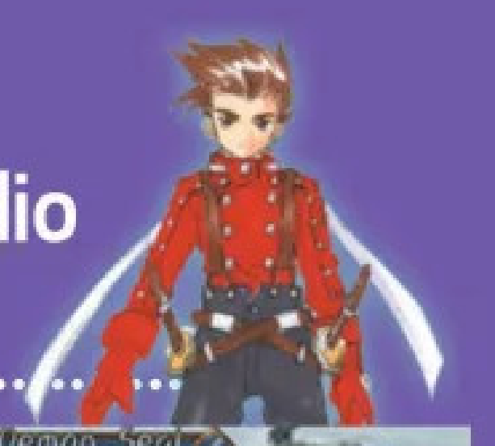
■ The GameCube’s memory cards were a mess.

TOP 25 GAMECUBE GAMES

THE GAMECUBE RECENTLY HIT ITS 20TH ANNIVERSARY IN EUROPE, SO TO CELEBRATE, WE ASKED RETRO GAMER READERS TO VOTE FOR THEIR FAVOURITE GAMES. THE RESULTS ARE IN – DID YOUR FAVOURITE MAKE THE CUT?

WORDS BY NICK THORPE

25 Tales Of Symphonia



■ DEVELOPER: **Namco Tales Studio**
■ GENRE: **RPG** ■ YEAR: **2003**

■ Lloyd's quest to save Sylvarant is a pretty standard RPG plot, but the first of the *Tales* series to make it to Europe impressed players with its lovely cel-shaded graphics and excellent battle system.

24 Skies Of Arcadia Legends

■ DEVELOPER: **Overworks**
■ GENRE: **RPG** ■ YEAR: **2002**

■ Sega's sky-sailing RPG was already a classic on the Dreamcast, but this GameCube port is the definitive edition thanks to fewer random battles, brand-new sidequests and improved technical performance.

23 Pikmin 2

■ DEVELOPER: **Nintendo EAD**
■ GENRE: **Strategy** ■ YEAR: **2004**

■ Building on the excellent original, Captain Olimar's second outing ditches the time limit, improves AI and introduces new white and purple Pikmin, which resist poison and are super strong respectively.

22 Metal Gear Solid: The Twin Snakes

■ DEVELOPER: **Konami/Silicon Knights**
■ GENRE: **Stealth** ■ YEAR: **2004**

■ This remake of *Metal Gear Solid* divides opinions – some love the updated graphics and new mechanics, some hate the new audio and flamboyant cutscenes. At its core, it's still a classic stealth experience.

21 Metroid Prime 2: Echoes

■ DEVELOPER: **Retro Studios**
■ GENRE: **Action adventure** ■ YEAR: **2004**

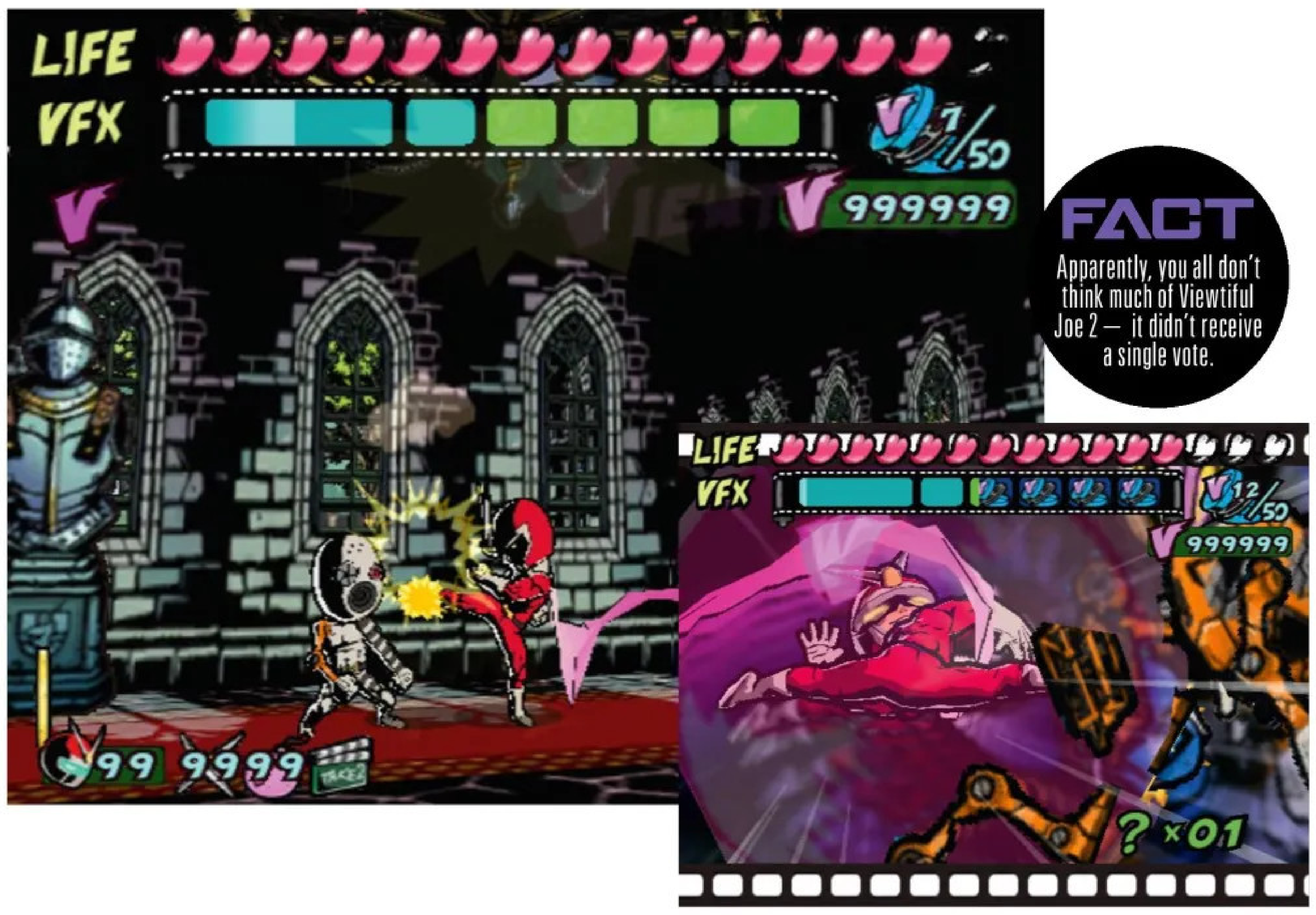
■ The addition of multiplayer fell surprisingly flat, but Retro Studios' second outing with Samus retains plenty of the best qualities of the original – it's just a bit harder and considerably more purple.

HENSHIN-A-GO-GO BABY!

20 VIEWTIFUL JOE

■ DEVELOPER: **Capcom Production Studio 4** ■ GENRE: **Action** ■ YEAR: **2004**

Announced as part of a selection of GameCube games that came to be known as the Capcom Five, *Viewtiful Joe* is one of the system's most stylish and inventive games. After Joe and his girlfriend are pulled into Movieland while watching a film, Joe has to venture through seven beat-'em-up stages with platform and puzzle elements in order to rescue her. Fortunately, he gains the ability to transform into a superhero to help with this mission. Apart from the lovely cel-shaded visuals, the film inspiration extends to many of Joe's special VFX Power abilities, which emulate camera effects and can be used in inventive ways to alter the flow of combat.



FACT

Apparently, you all don't think much of Viewtiful Joe 2 – it didn't receive a single vote.

ACTION! JOE'S VFX POWERS, AND WHAT THEY'RE USED FOR

Slow

■ Slow motion is a classic film technique, and here it helps Joe to avoid attacks – not only are they easier to dodge, but he can deflect bullets and more. In this state, enemies can be knocked into one another for collateral carnage too, earning you better battle ratings.

Mach Speed

■ If Joe needs to cross the screen quickly, this is the technique he'll need to use. Speeding things up in combat might seem counterproductive, but Joe's rapid-fire attacks will gain multiple after-images, and he can even shield himself from heat attacks.

Zoom

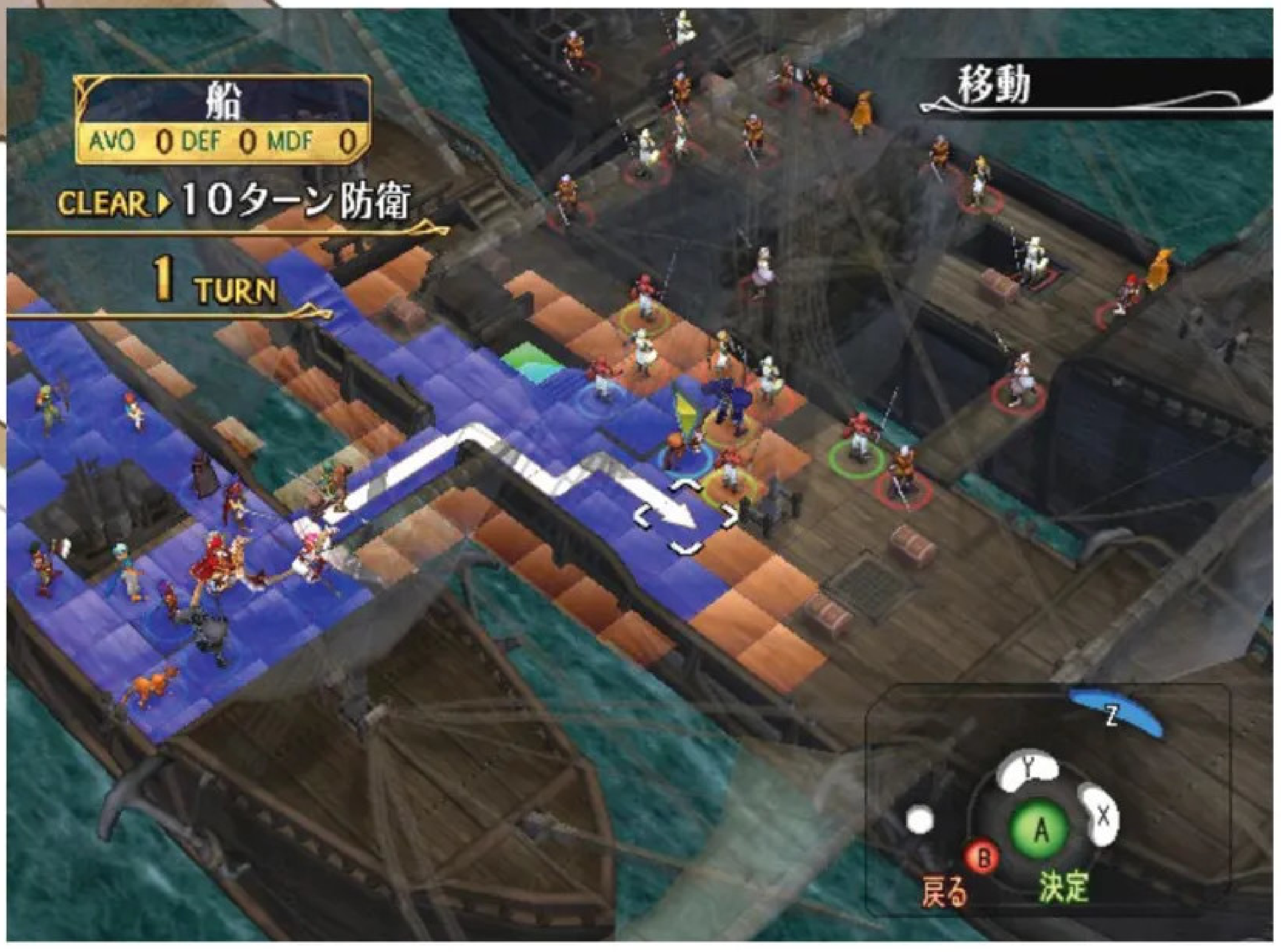
■ Bringing the action closer to Joe gives him a set of flashy new attacks, all of which do some major damage to the bad guys. A flurry of fists, a devastating spinning kick, a corkscrew jump – all of these things are possible in Zoom, and they're viewtiful.

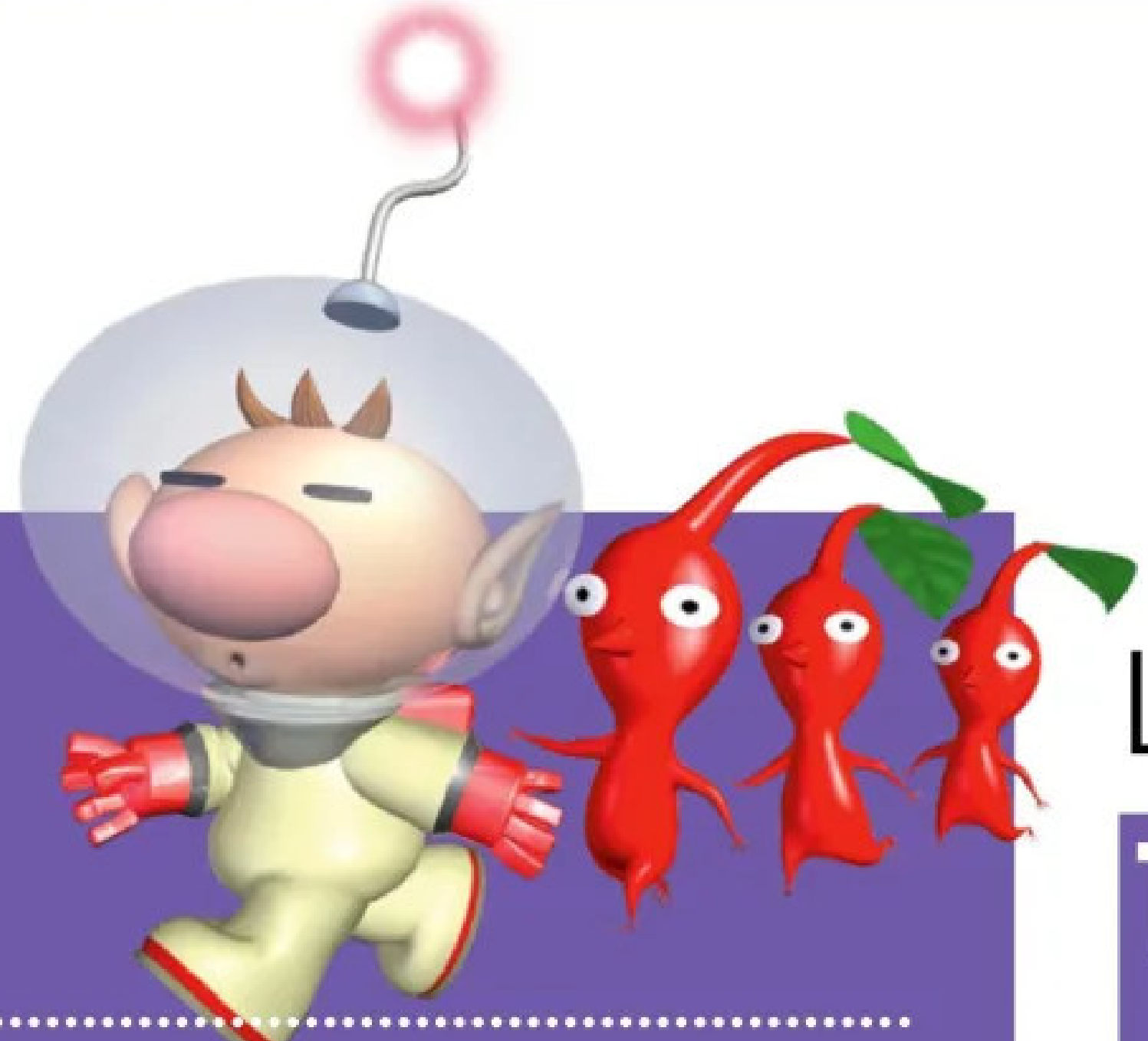
OUT OF OBSCURITY

19 FIRE EMBLEM: PATH OF RADIANCE

■ DEVELOPER: **Intelligent Systems** ■ GENRE: **Tactical RPG** ■ YEAR: **2005**

At the beginning of the generation, *Fire Emblem* was an unknown quantity to most Nintendo fans outside of Japan, seen only in *Super Smash Bros Melee*. However, in its homeland the series has long been enjoyed for its combination of tactical battles and fantasy storytelling. Fans who stayed loyal to the system were rewarded with the chance to play the first 3D entry in the series, an excellent effort from Intelligent Systems which sees you attempting to thwart the Daein invasion of Crimea and restore its exiled princess to the throne. As a late release, it's now a rare and expensive game – complete copies go for £175+ today. ▶



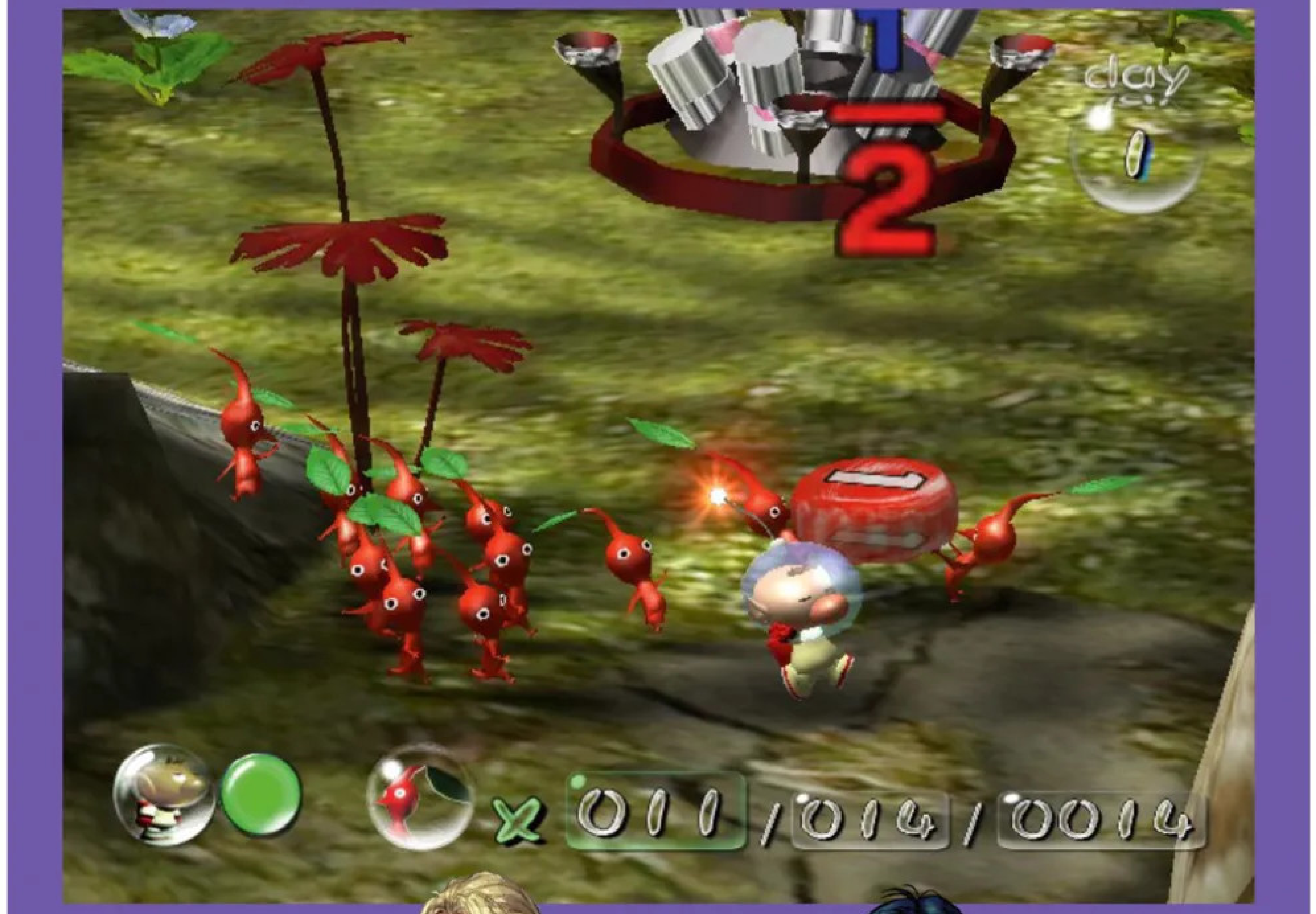


A QUICK **PIK-ME-UP**

18 PIKMIN

■ DEVELOPER: **Nintendo EAD** ■ GENRE: **Strategy** ■ YEAR: **2001**

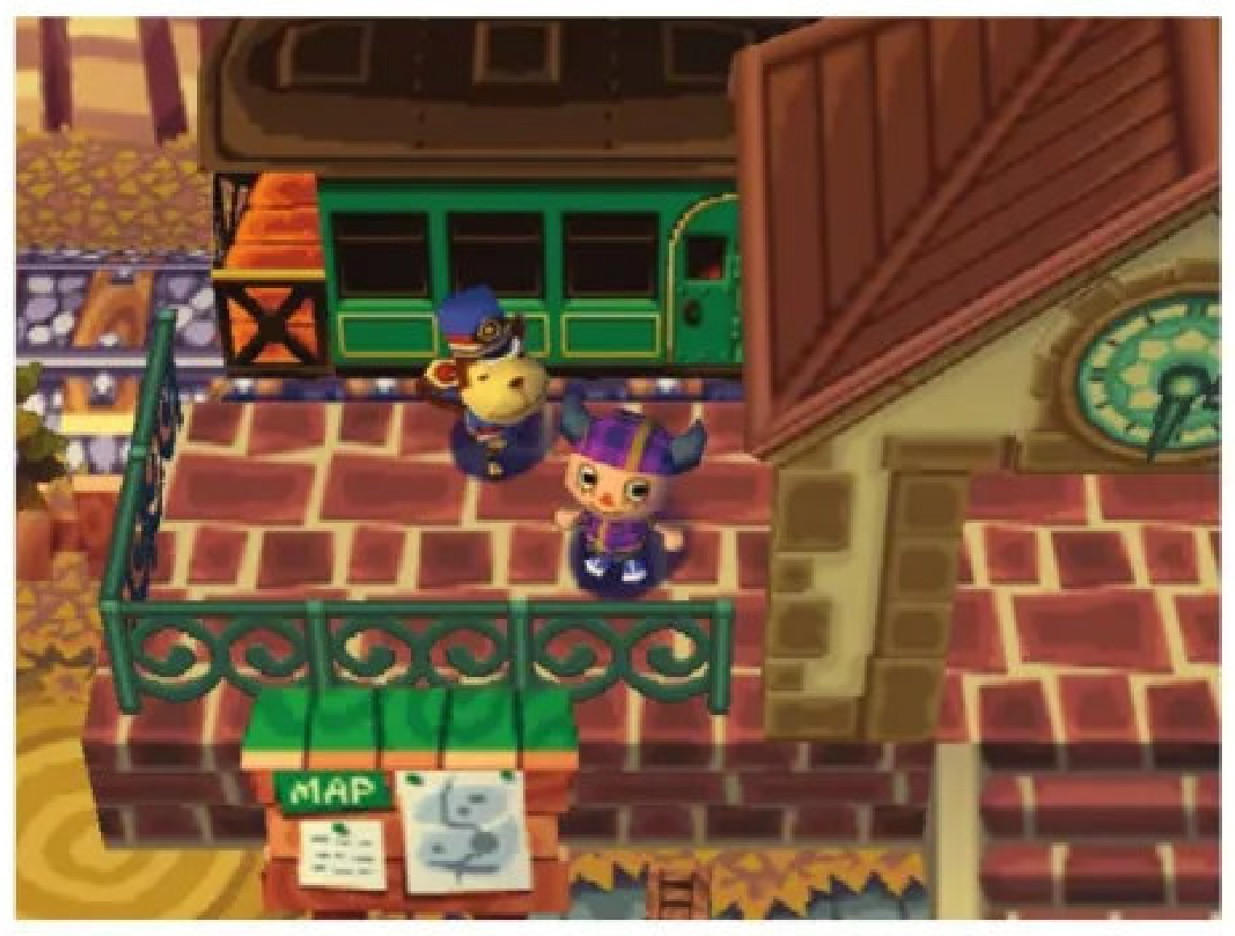
With many first-party GameCube games elaborating on their N64 predecessors, *Pikmin* was a new concept that felt like a real breath of fresh air. As Captain Olimar, you've got 30 days to rebuild your spaceship, and you're reliant on the odd titular creatures to help you find them. The way you command various Pikmin is reminiscent of war games, but with the signature family friendly Nintendo twist.



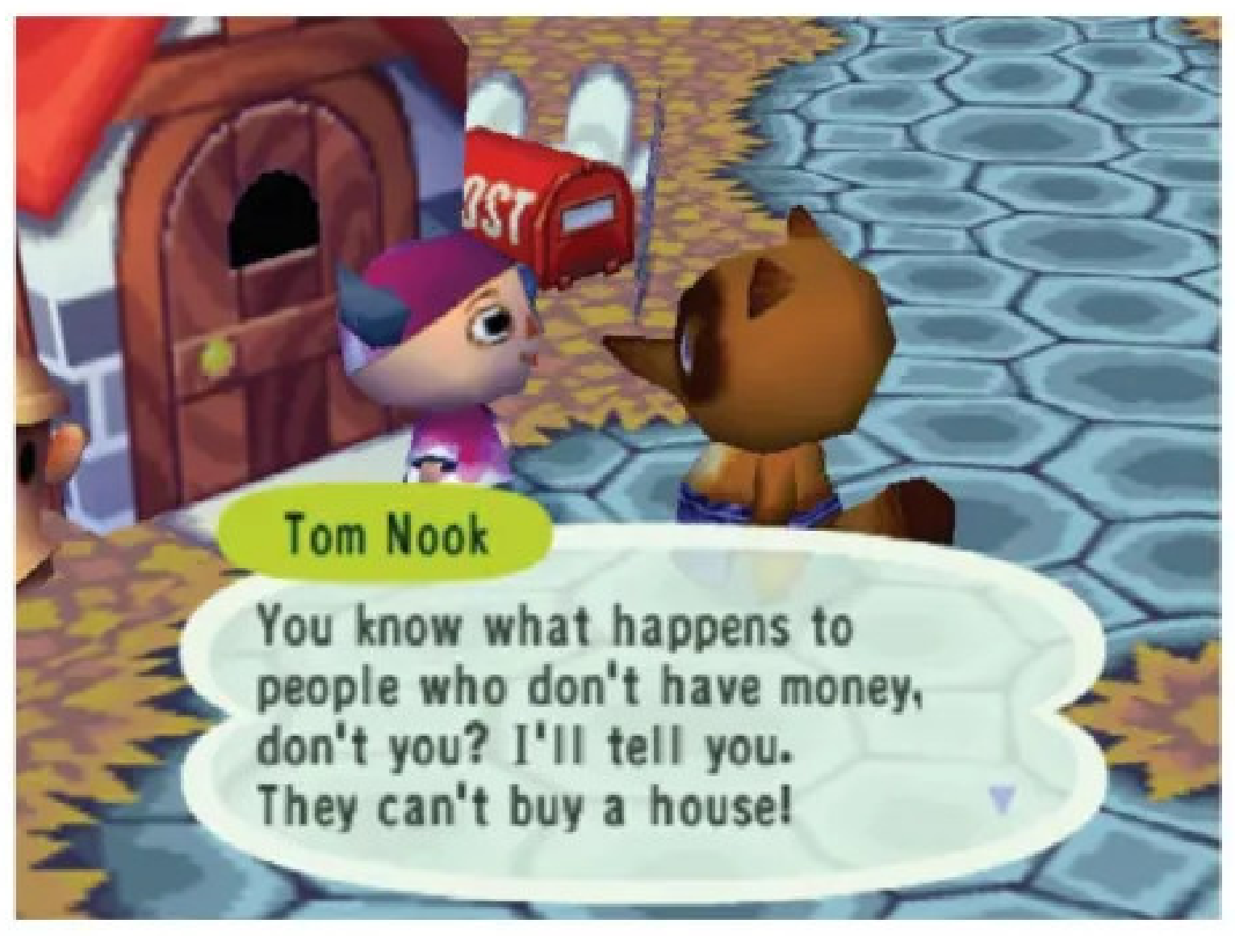
LIFE IN THE **SLOW LANE**

16 ANIMAL CROSSING

■ DEVELOPER: **Nintendo EAD** ■ GENRE: **Life simulation** ■ YEAR: **2001**

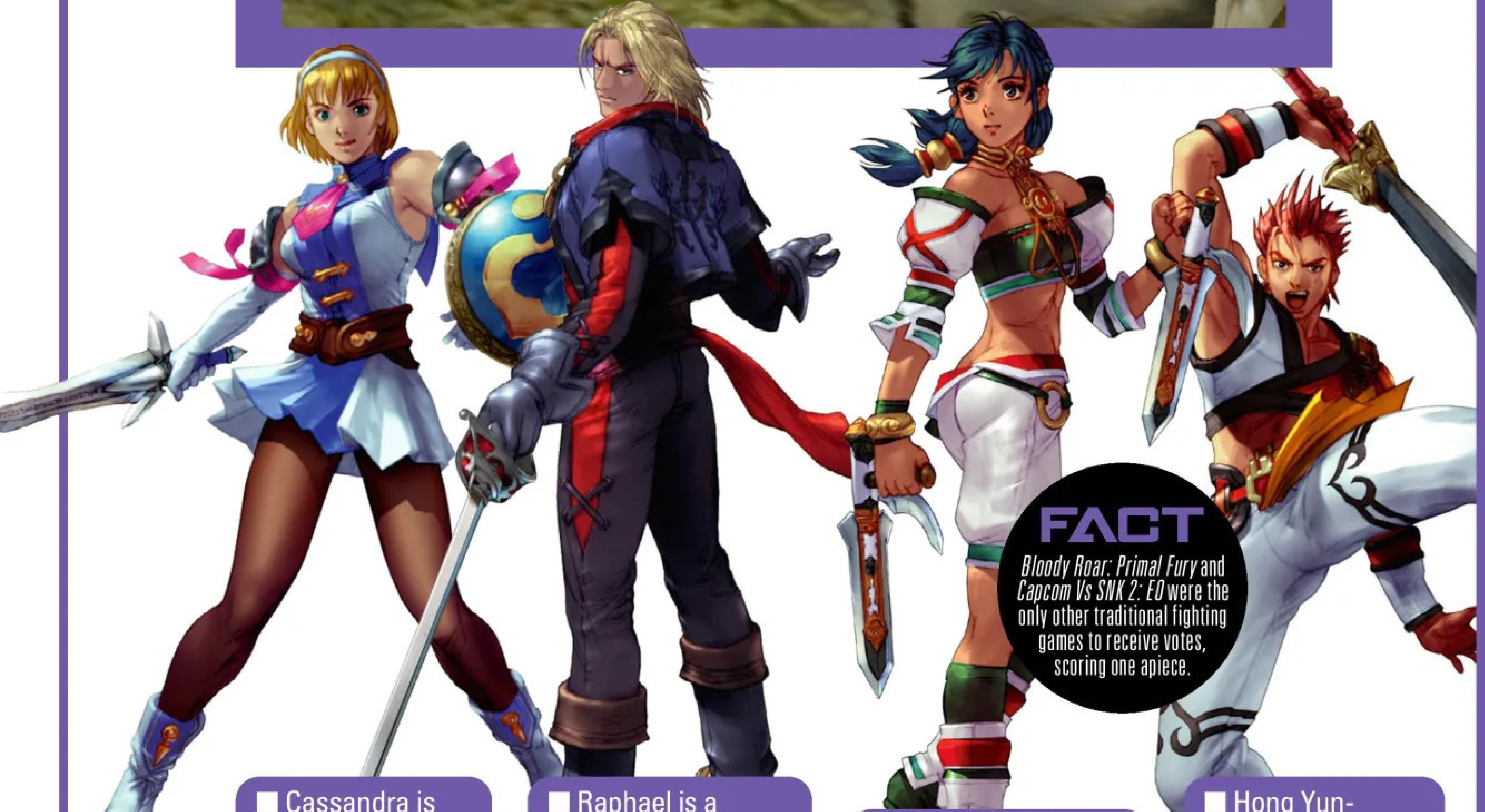


- ***Animal Crossing* was originally released for the N64 in Japan only – this GameCube edition is an enhanced port of that original version.**
- Despite being one of the earliest Japanese GameCube releases, Nintendo didn't release *Animal Crossing* in Europe until September 2004.
- **The North American version had e-Reader functions, allowing you to unlock extra NES games. The e-Reader wasn't released in Europe.**
- Tom Nook gives interest-free mortgages with no repayment schedule. We apologise for any previous suggestions that he is a crook.



Tom Nook

You know what happens to people who don't have money, don't you? I'll tell you. They can't buy a house!



FACT

Bloody Roar: Primal Fury and *Capcom Vs SNK 2: EO* were the only other traditional fighting games to receive votes, scoring one apiece.

- Cassandra is Sophitia's younger sister, who isn't quite as devout in her faith. She fights with a similar style to her sibling.
- Raphael is a French nobleman, who seeks the Soul Edge for the benefit of his adoptive daughter. He fights using fencing techniques.
- Talim was raised to be her village's last priestess, and is drawn to the Soul Edge's energy. She fights with tonfa-like blades.
- Hong Yun-Seong is an admirer of Hwang from the previous games, and as a student of the same school, fights similarly.

NEW FORMAT, **NEW FACES**

17 SOULCALIBUR II

■ DEVELOPER: **Project Soul** ■ GENRE: **Fighting** ■ YEAR: **2003**

Just like its predecessor, *Soulcalibur II* is a superb weapons-based 3D fighting game featuring some of the very best graphics on the console. It's a great game on any system, but the exclusive inclusion of *Zelda*'s Link had players flocking to the GameCube version. Four more fighters (above) also debuted.

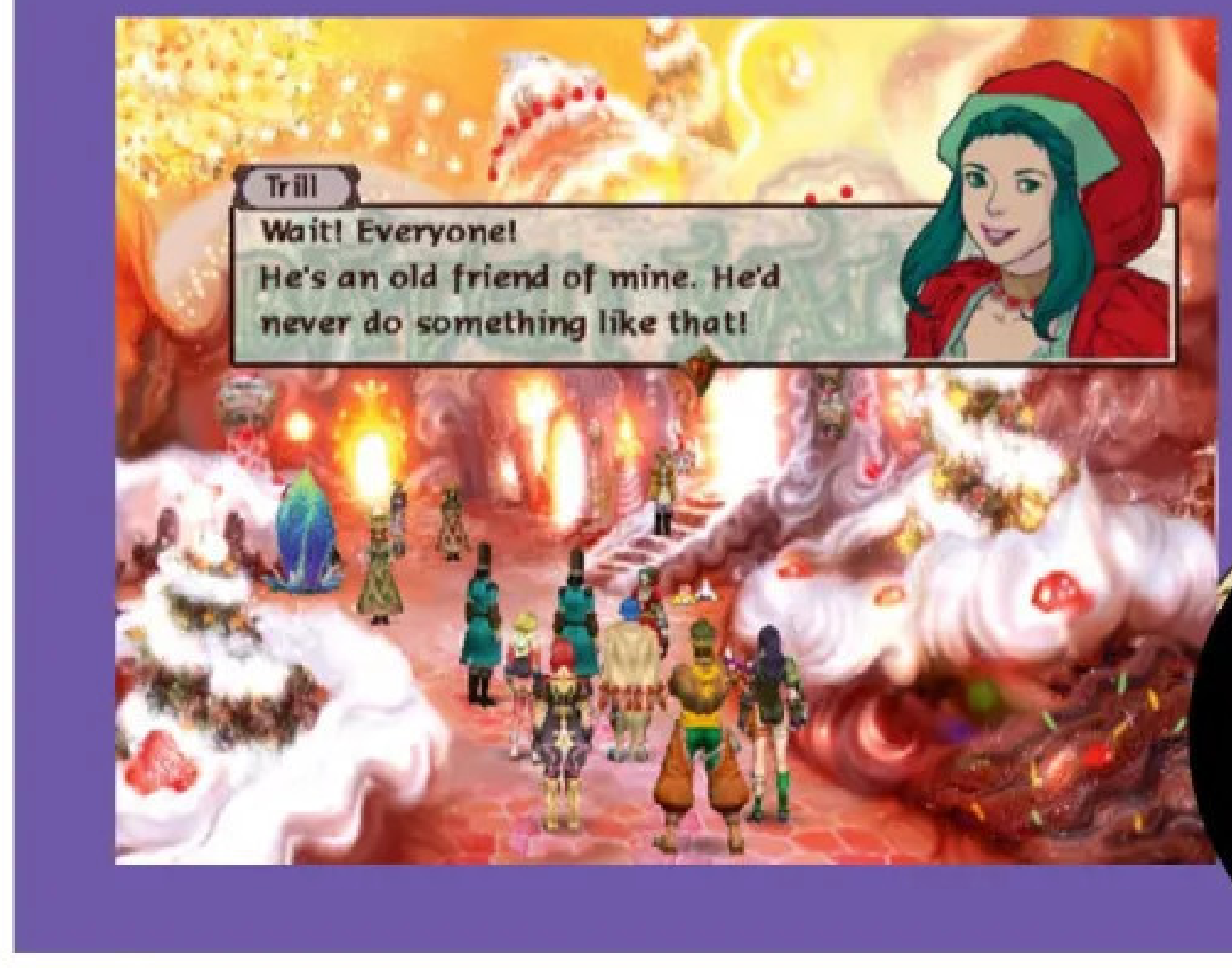
CARD CARRYING **ADVENTURER**

15 BATEN KAITOS: ETERNAL WINGS AND THE LOST OCEAN

■ DEVELOPER: **Monolith Soft/Tri-Crescendo**
■ GENRE: **RPG** ■ YEAR: **2003**

Card games seemed to be all the rage during the GameCube era, as quite a few games picked up card mechanics to varying degrees of success – *Lost Kingdoms* sadly didn't make this list despite being great, whereas *Phantasy Star Online Episode III: CARD Revolution* was not the sequel fans had expected. According to you lot, *Baten Kaitos* is the very best of the bunch, and it's not hard to see why you've reached that conclusion.

You guide Kalas, a young man whose goal in life is to gain revenge for the killing of his brother and grandfather. He quickly finds himself wrapped up in much larger problems, and ends up joining up with others to adventure across a variety of weird and wonderful locations such as picture book towns and places made of sweets. The battle system is compelling, but it's the game's unique sense of style that really sets it apart from other RPGs of the era and on the GameCube.

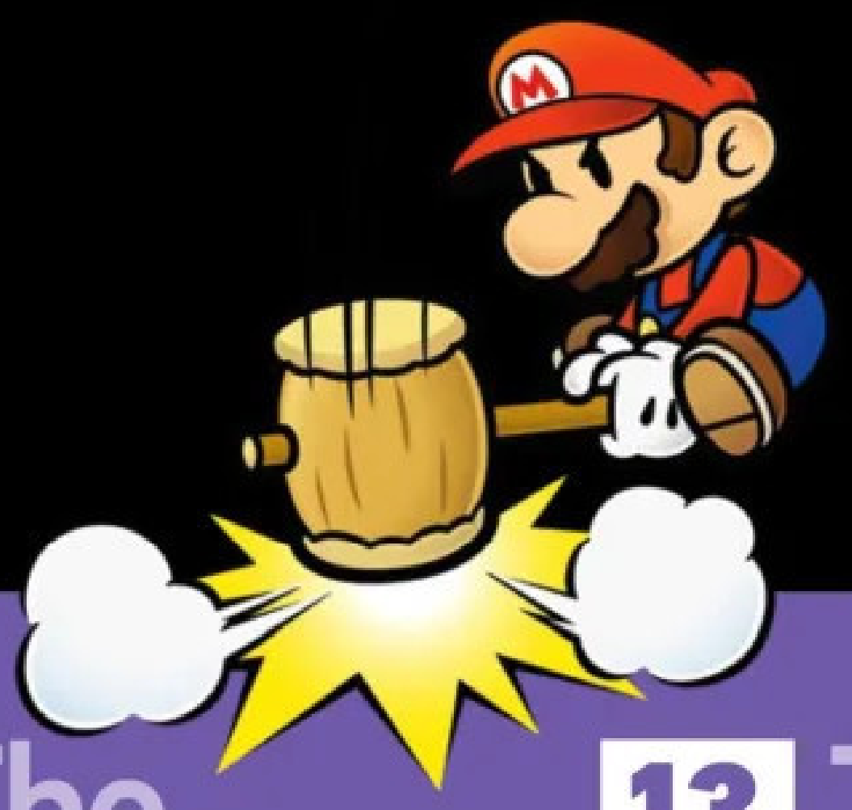


Trill

Wait! Everyone! He's an old friend of mine. He'd never do something like that!

FACT

Baten Kaitos Origins almost made this list too, finishing 26th – likely hampered by its lack of a PAL release.



14 Paper Mario: The Thousand-Year Door

■ DEVELOPER: **Intelligent Systems**
■ GENRE: **RPG** ■ YEAR: **2004**

■ The original *Paper Mario* was beloved for its unique art style, light-hearted story and its use of active elements in turn-based battles. This sequel retains those qualities and is arguably the most-beloved game in the *Paper Mario* series – which is probably why it's so expensive now.

13 The Legend Of Zelda: Twilight Princess

■ DEVELOPER: **Nintendo EAD**
■ GENRE: **Action adventure** ■ YEAR: **2006**

■ Most players enjoyed this on the Wii, which is probably why it didn't place higher, but *Twilight Princess* was a fine swan song for the dinky purple box. The darker take on the *Zelda* world provided an unforgettable atmosphere, married to the series' standard stellar game design.

12 Super Monkey Ball

■ DEVELOPER: **Amusement Vision**
■ GENRE: **Action** ■ YEAR: **2001**

■ This masterpiece of minimalist game design tasks you with guiding AiAi and friends through devilish obstacle courses with only the analogue stick. It's equally compelling and infuriating alone or with friends, and the Monkey Target minigame only adds multiplayer longevity.

WHO YOU **GONNA CALL?**

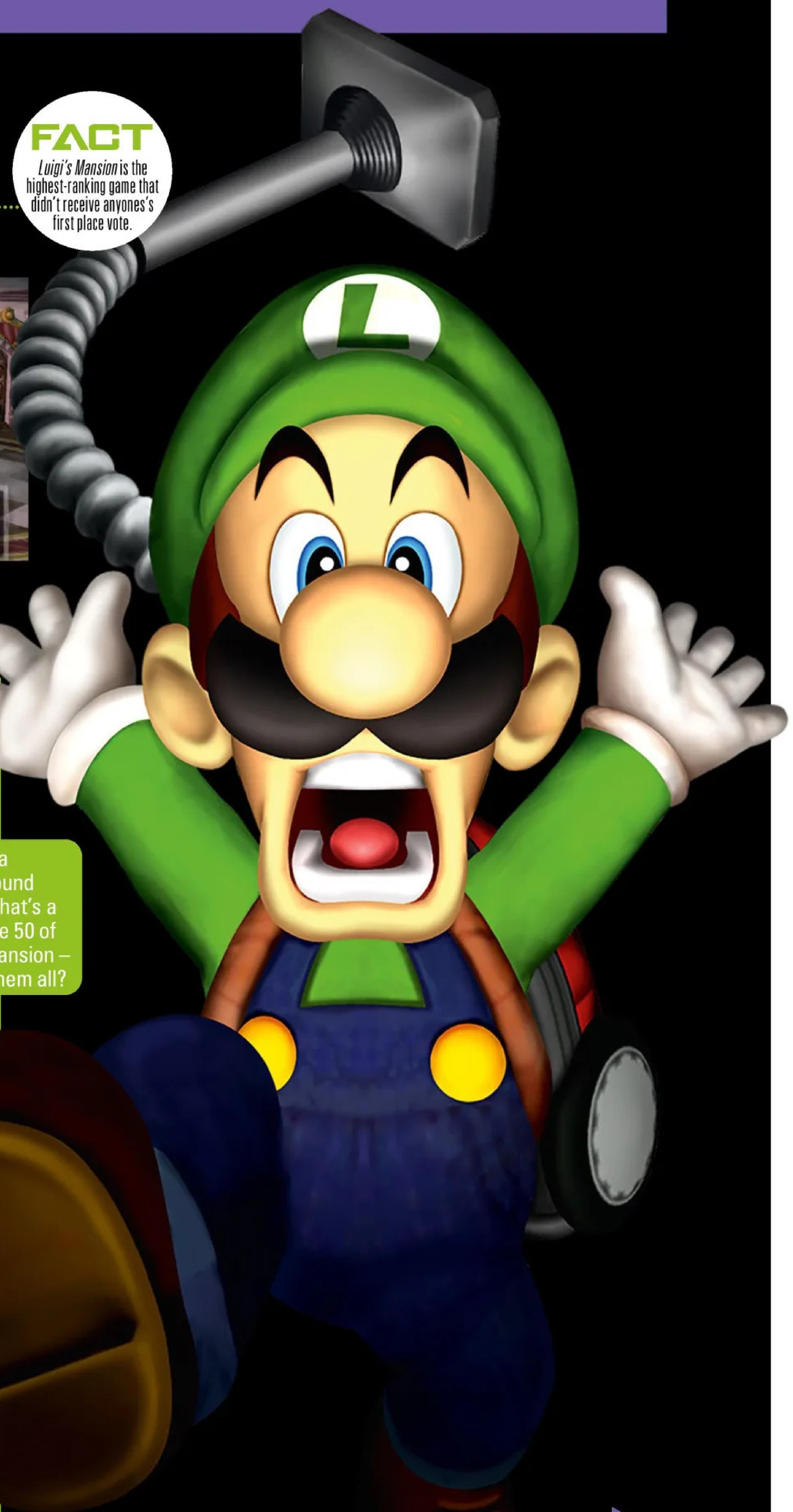
11 LUIGI'S MANSION

■ DEVELOPER: **Nintendo EAD** ■ GENRE: **Action adventure** ■ YEAR: **2001**

Luigi has won a mansion! There are only a few snags – he never entered the competition for it, it's full of ghosts and Mario has gone missing. Rescuing him involves wandering around the mansion with a vacuum cleaner, the Poltergust 3000, and hoovering up the spectral menaces. Players had expected a traditional Mario platformer at launch, but *Luigi's Mansion* accounted for itself well with an unexpected gameplay style and some great graphics, with particularly impressive lighting effects. It was a tad short, but so very sweet with it.

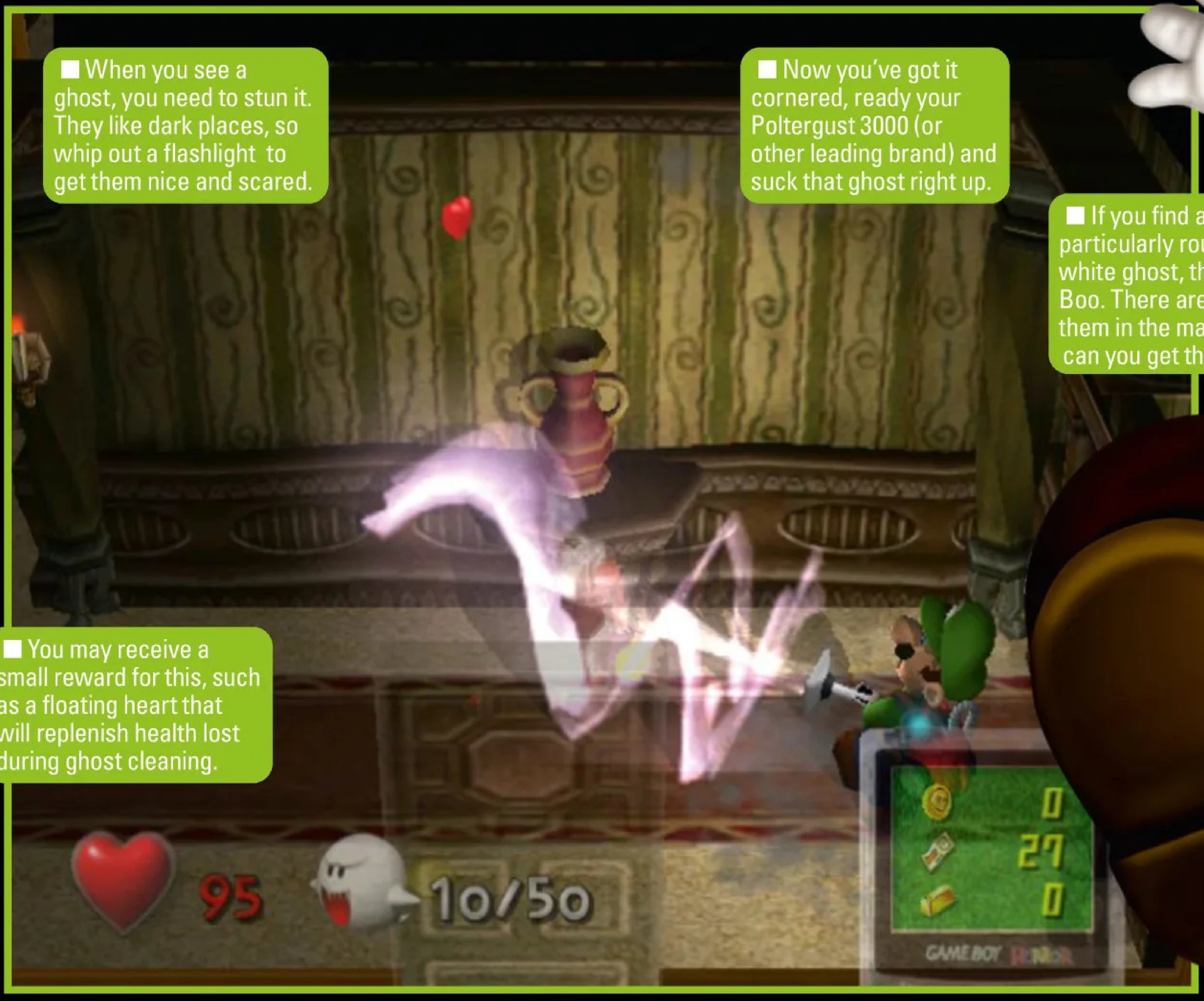
FACT

Luigi's Mansion is the highest-ranking game that didn't receive anyone's first place vote.



GHOST BUSTING GUIDE

STEP-BY-STEP INSTRUCTIONS ON HOW TO EXILE ECTOPLASM FROM YOUR MANSION



■ When you see a ghost, you need to stun it. They like dark places, so whip out a flashlight to get them nice and scared.

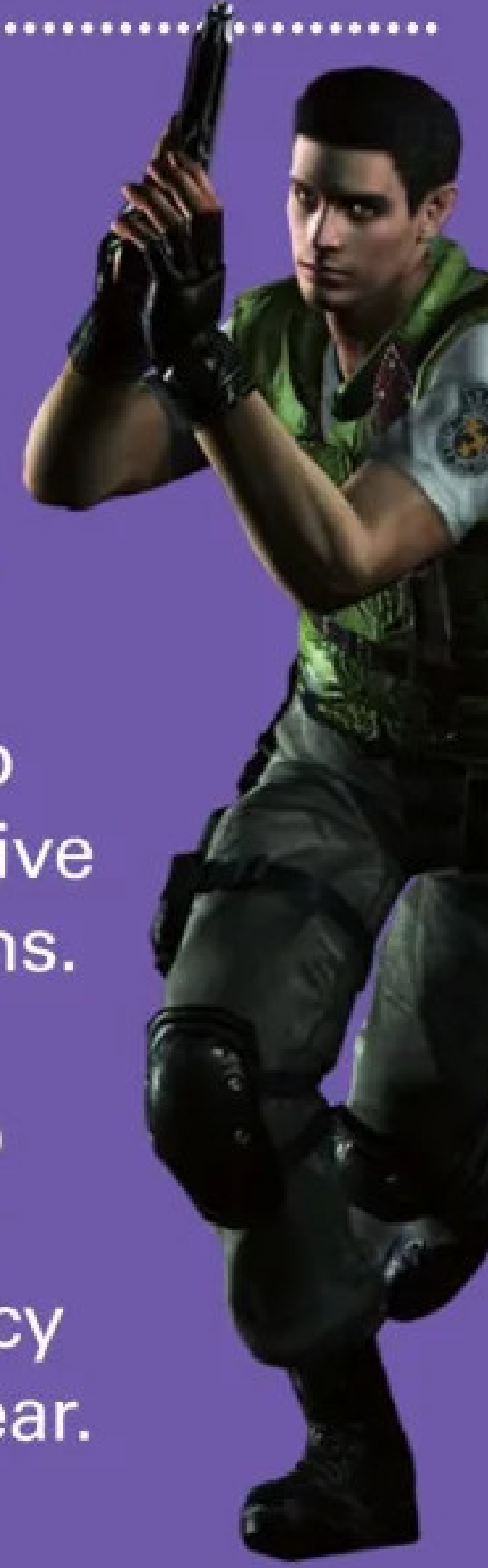
■ Now you've got it cornered, ready your Poltergust 3000 (or other leading brand) and suck that ghost right up.

■ If you find a particularly round white ghost, that's a Boo. There are 50 of them in the mansion – can you get them all?

■ You may receive a small reward for this, such as a floating heart that will replenish health lost during ghost cleaning.

10 Resident Evil

■DEVELOPER: **Capcom Production Studio 4**
■GENRE: **Survival horror** ■YEAR: **2002**



■ Remaking a game as beloved as *Resident Evil* is hard, but Capcom provided a masterclass in how to do it right. The basic formula was kept intact, but everything was upgraded – the graphics were absolutely incredible, the audio was improved and new defensive weapons gave you extra options. Meanwhile, new sections and enemies were included to keep old fans on their toes, ensuring that familiarity and complacency didn't do anything to dull the fear.

09 Eternal Darkness: Sanity's Requiem

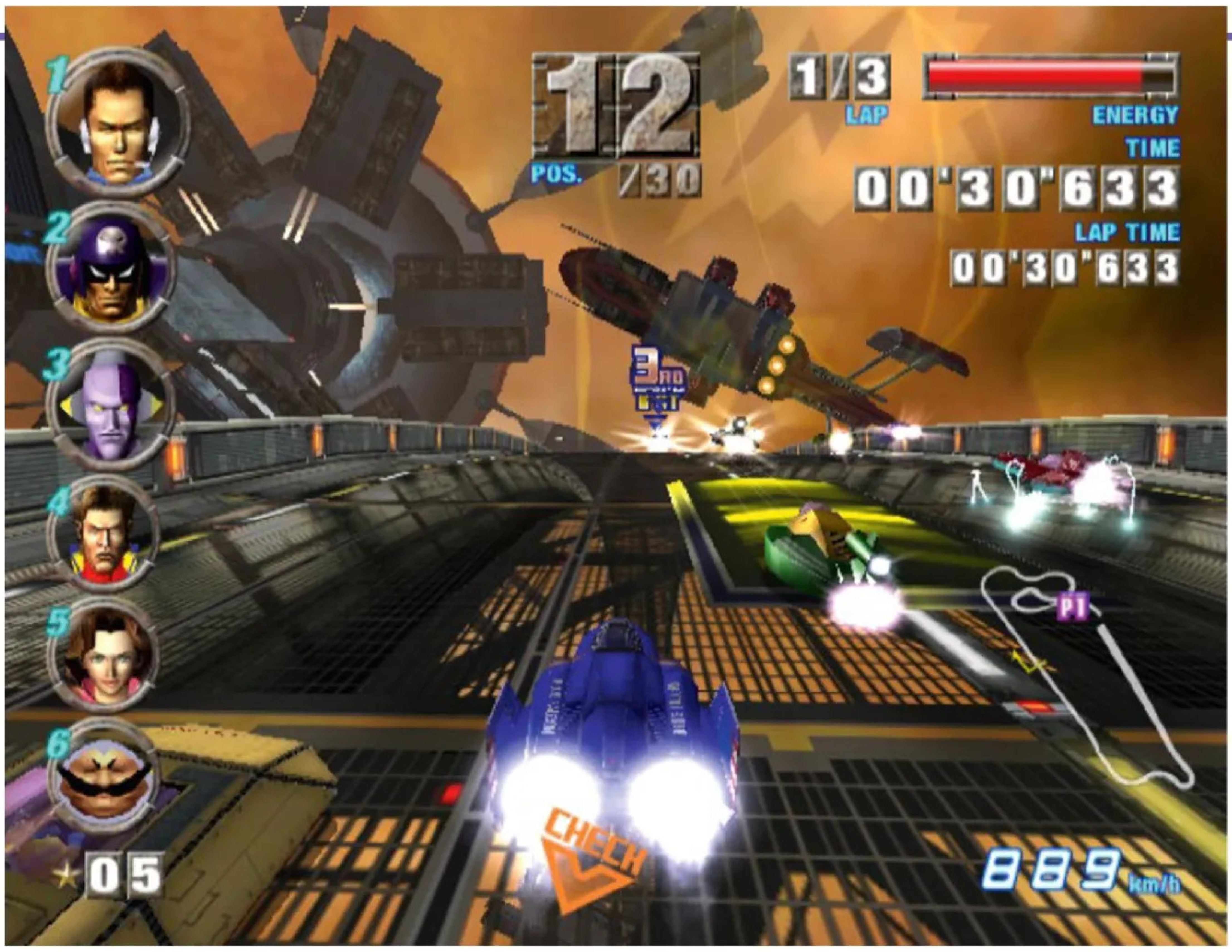
■DEVELOPER: **Silicon Knights**
■GENRE: **Action adventure** ■YEAR: **2002**

■ Originally headed for the N64, this horror game presents a plot in which various characters become entangled in the machinations of eldritch beings over centuries. The Lovecraft-inspired story is well told and the game design is rock solid, but it's the Sanity System that makes *Eternal Darkness* so memorable. As your characters are maddened by their predicaments, the game will start to play on your fears as a player, often breaking the fourth wall.

08 Star Wars Rogue Squadron II: Rogue Leader

■DEVELOPER: **Factor 5**
■GENRE: **Action** ■YEAR: **2001**

■ *Rogue Leader*'s path to greatness was simple – take the game design of N64 favourite *Star Wars: Rogue Squadron* and build upon it. Factor 5 went the extra mile, though. The game is packed with great movie moments, depicted with the most spectacular graphics seen in a *Star Wars* game to that point. What makes *Rogue Leader* especially impressive is that it was a launch game, and it doubtless inspired many early adopters to pick up their GameCubes.



UNLIKELY ALLIES **TRIUMPH**

07 F-ZERO GX

■DEVELOPER: **Amusement Vision** ■GENRE: **Racing** ■YEAR: **2003**

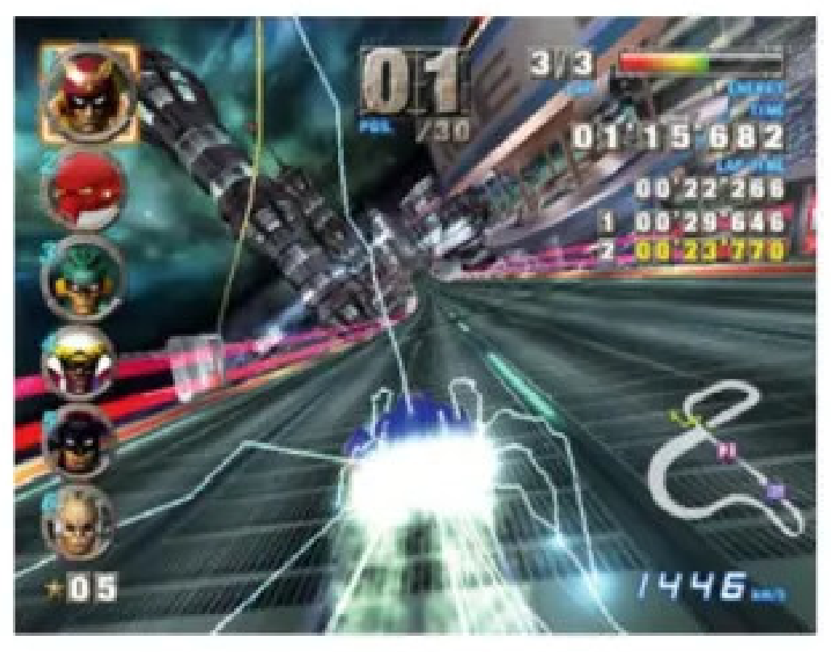
Nintendo's decision to turn its iconic racing franchise over to long-time rival Sega initially raised eyebrows, but the result just raised pulses with its intensity, with its twisted tracks providing a fierce challenge. The detailed environments are amazing, but you won't have time to admire them thanks to the game's incredible speed, and the electronic soundtrack is the perfect accompaniment to the action. We'd love to see a new *F-Zero* one day, but besting *GX* would be a formidable challenge.

FACT
Two of Amusement Vision's four GameCube games made this list, and *Super Monkey Ball 2* narrowly missed joining them, placing 27th.

BLUE FALCON
07

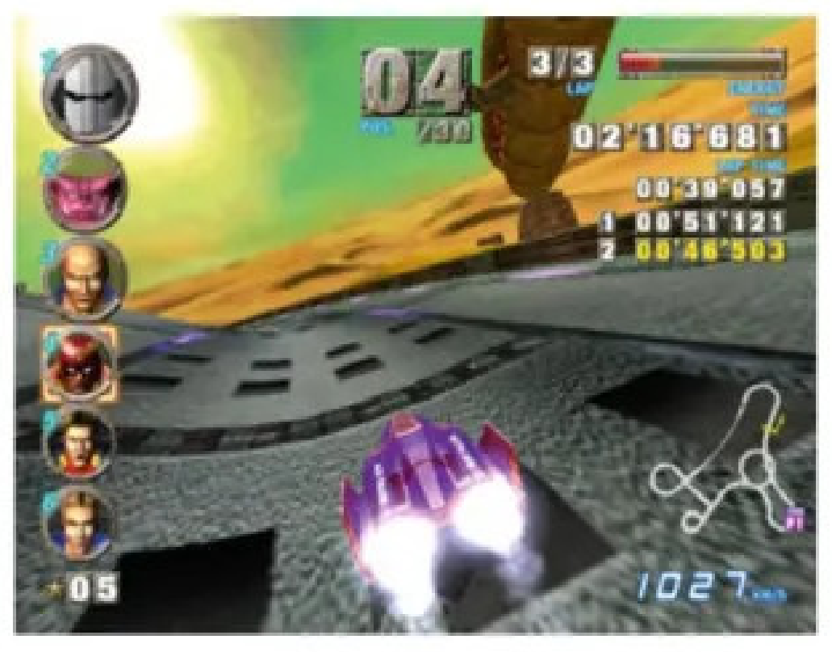
PLACES TO RACE

SOME OF THE SPECTACULAR SCENERY YOU'LL SPEED PAST



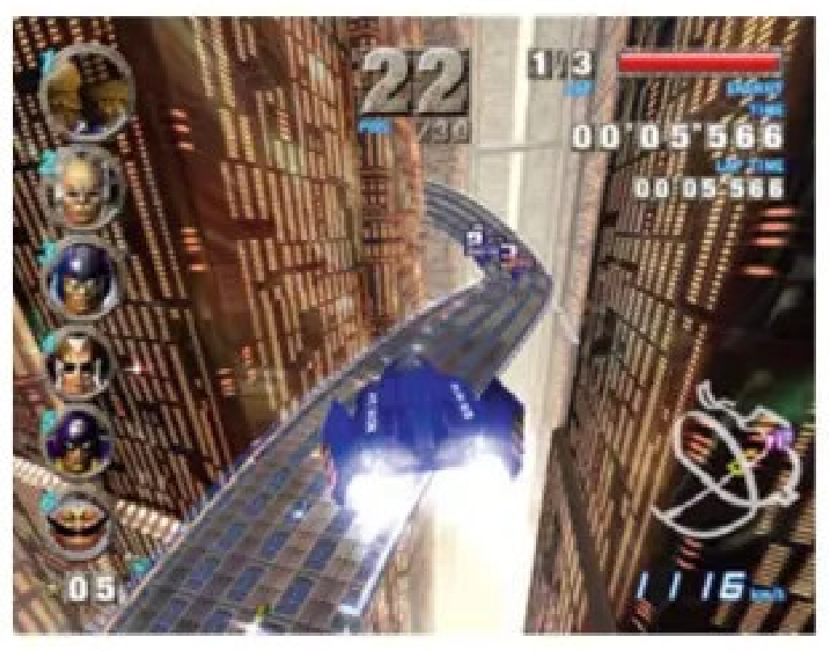
Mute City

■ *F-Zero*'s most iconic location, which now looks like the kind of bustling futuristic metropolis we'd like to call home.



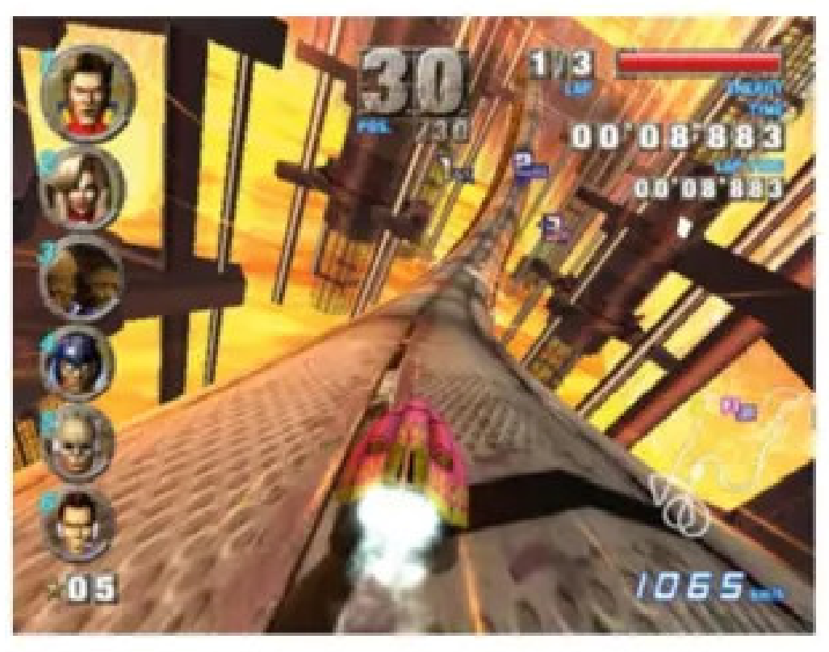
Sand Ocean

■ Few people inhabit this barren area – probably because of all the desert twisters, as well as the enormous sand worms.



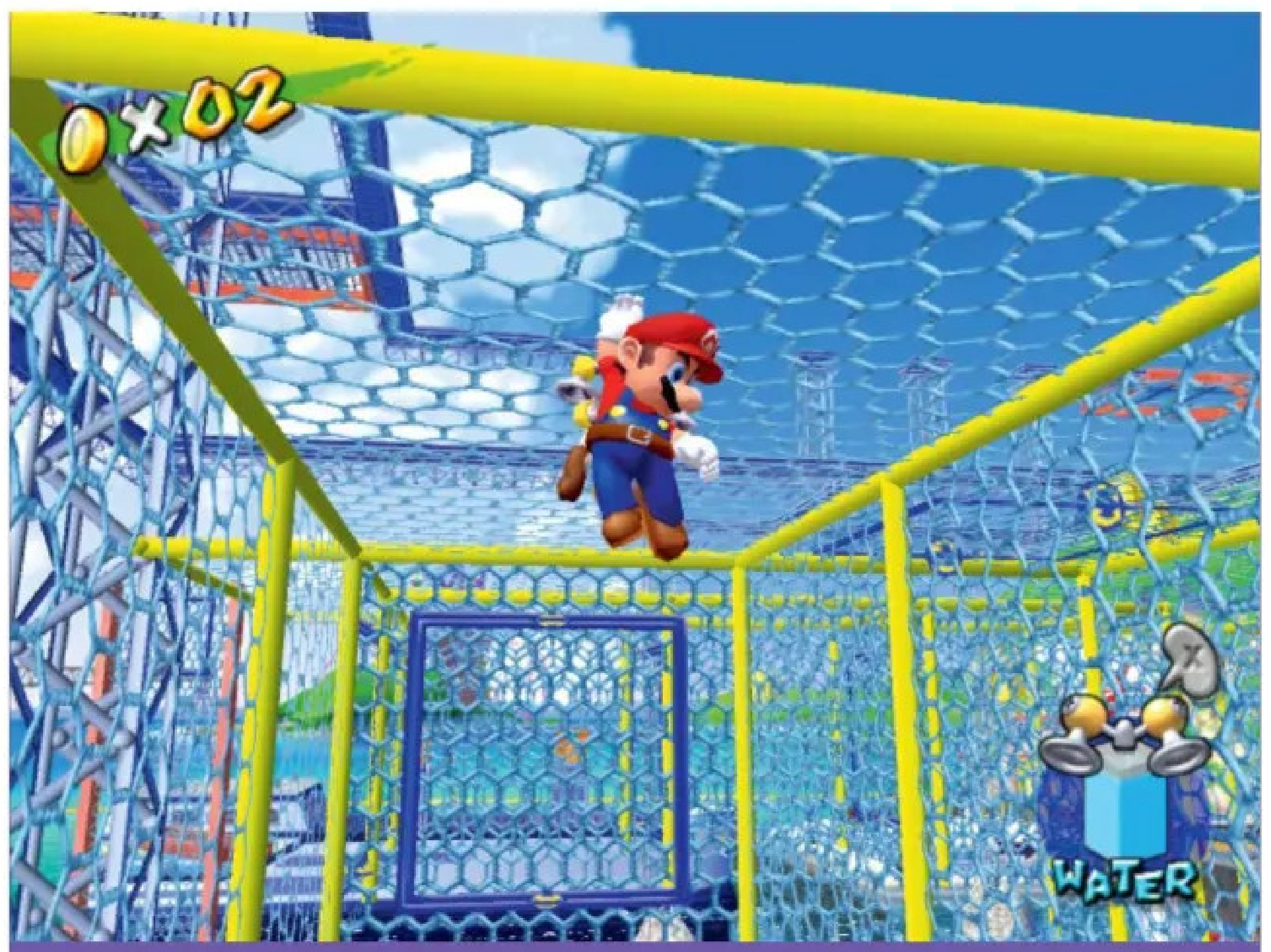
Aeropolis

■ Big jumps are to be found on this racetrack, which weaves between the seemingly infinite number of high-tech towers here.



Fire Field

■ A hellish landscape of lava and pipework, in which only your vehicle protects you from a face full of hot ash.



ISLAND **ANTICS**

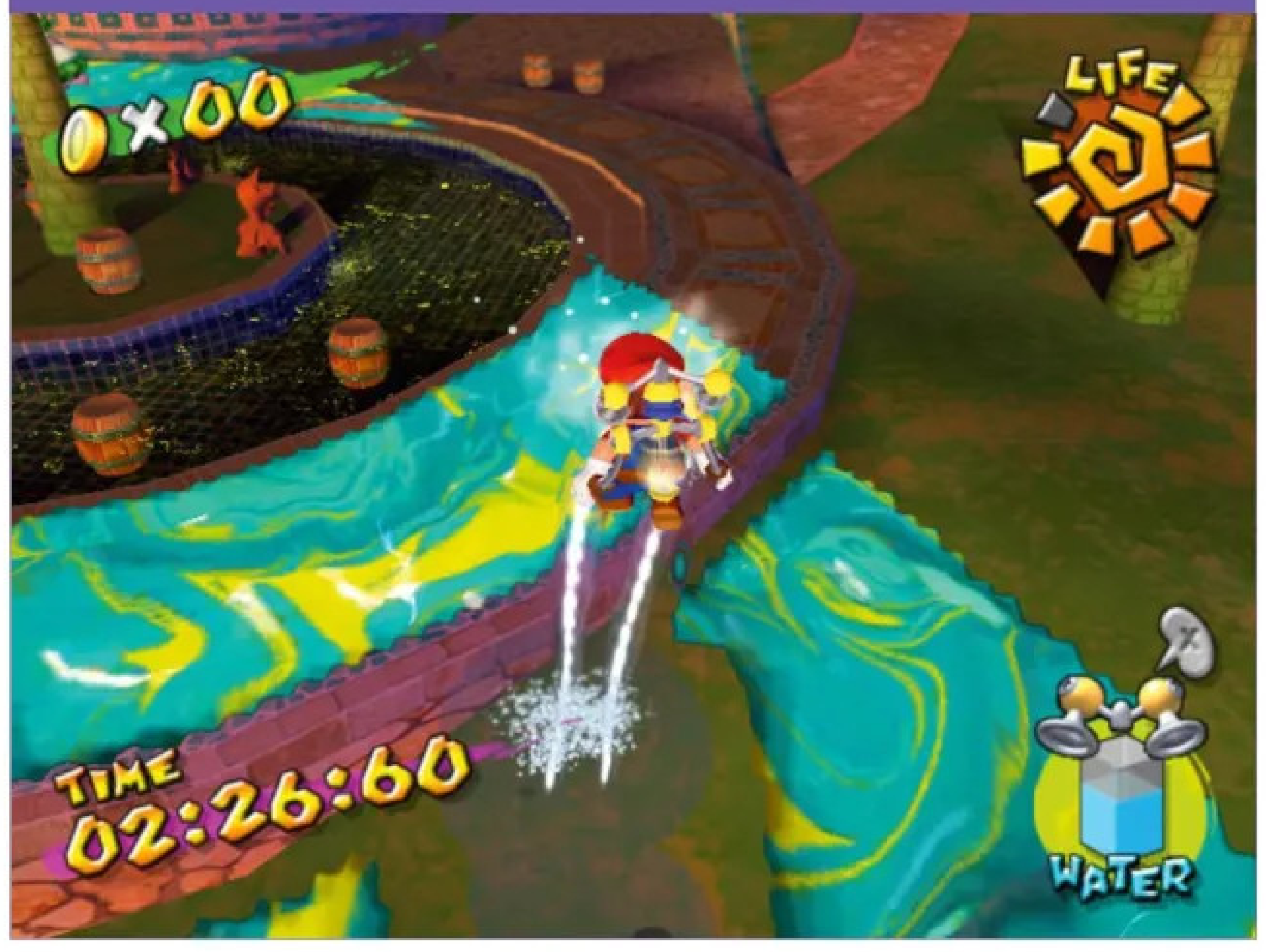
06 Super Mario Sunshine

■ DEVELOPER: **Nintendo EAD**
■ GENRE: **Platformer** ■ YEAR: **2002**

FACT

All of our previous Top 25 lists for Nintendo home consoles had *Mario* games in the top spot – *Super Mario Bros 3*, *Super Mario World* and *Super Mario 64*.

■ It's a bit of a shock to see a mainline Mario platformer fall outside of the top five, but *Super Mario Sunshine* has always been a bit of an oddity. The game sticks closely to the formula of *Super Mario 64*, but with more expansive stages and the new FLUDD machine that allows Mario to shoot water, hover and boost into the air. That's both a core strength and core weakness of the game – it's based on one of the greatest games ever, and few platform games can match it for the quality of its level design and objective structure. Some players expected more innovation though, and uncharacteristic technical rough edges hurt the overall experience. Still, even a slightly weak *Mario* game is better than the vast majority of games.

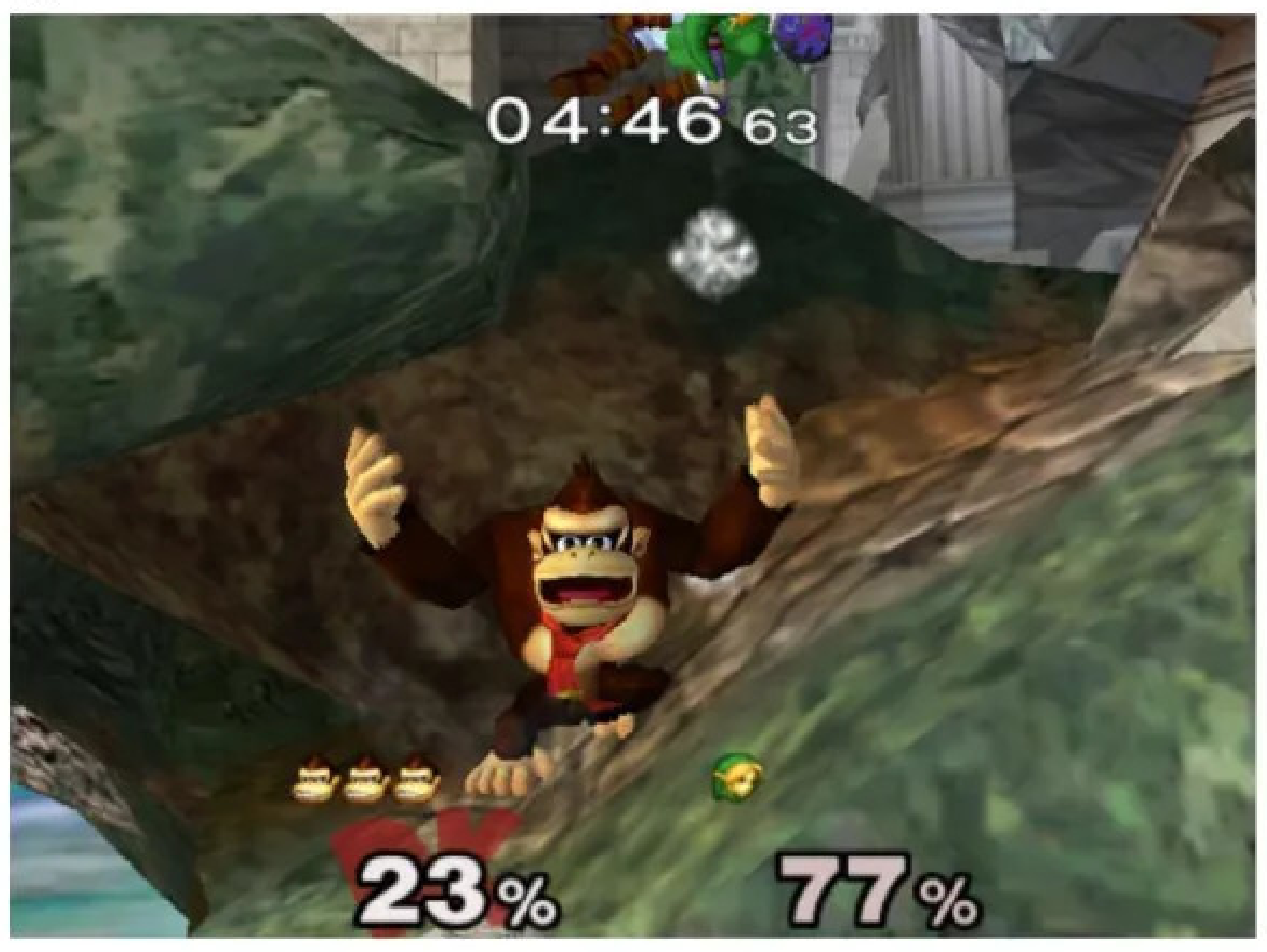


THE GAMECUBE'S **BIGGEST PARTY**

05 SUPER SMASH BROS MELEE

■ DEVELOPER: **HAL Laboratory** ■ GENRE: **Fighting** ■ YEAR: **2001**

■ The best-selling GameCube game of all time doesn't hit your top spot, but its high placing shouldn't come as a surprise. *Super Smash Bros Melee* not only added plenty of extra content over its N64 predecessor, it refined the fighting into a faster, more skill intensive style – one which has captivated fans and ensured that the game's competitive scene has survived far longer than many of its own successors. However, the party-oriented heart of the game ensures that it's not just for the obsessive.

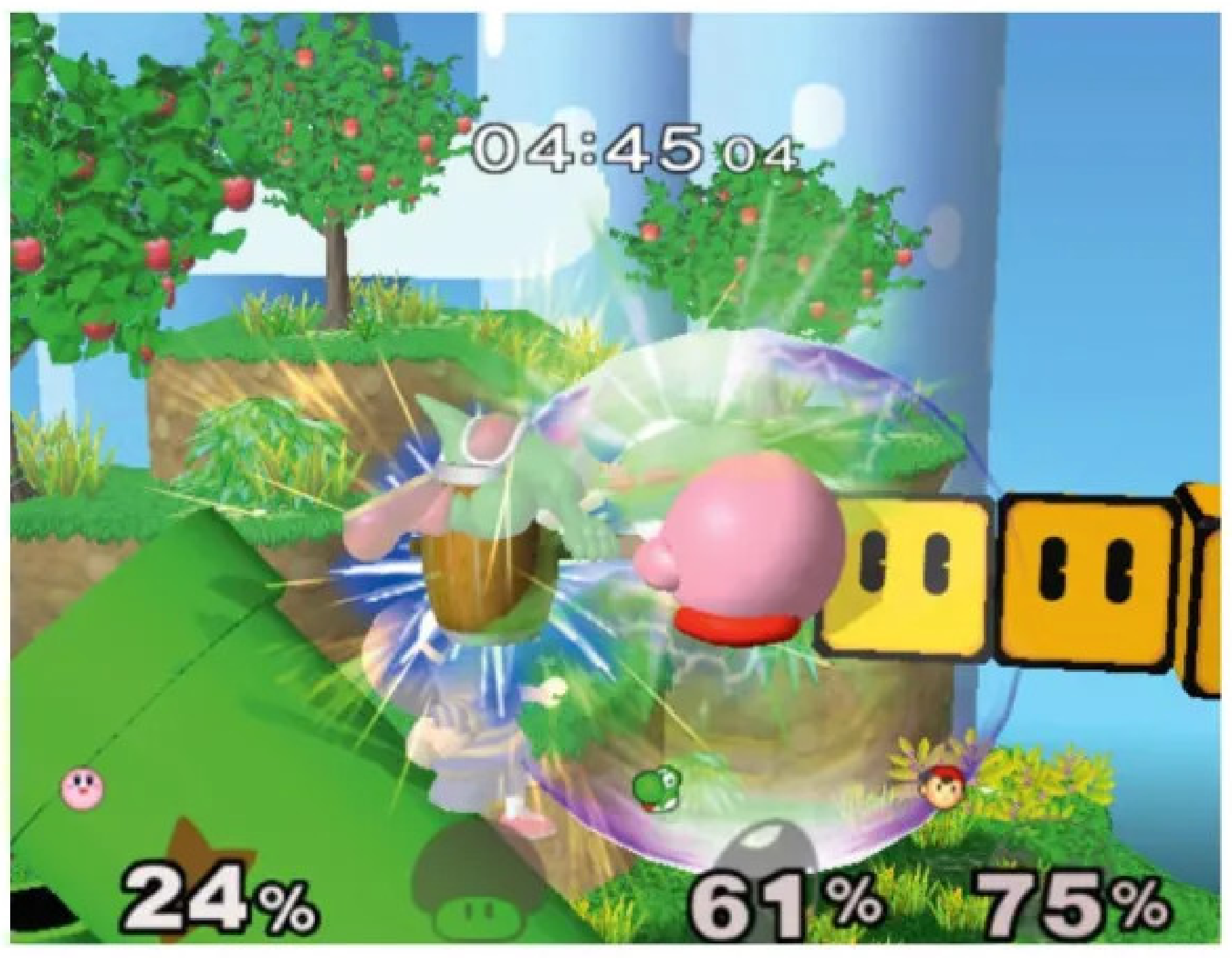


SMASHING FOR GLORY

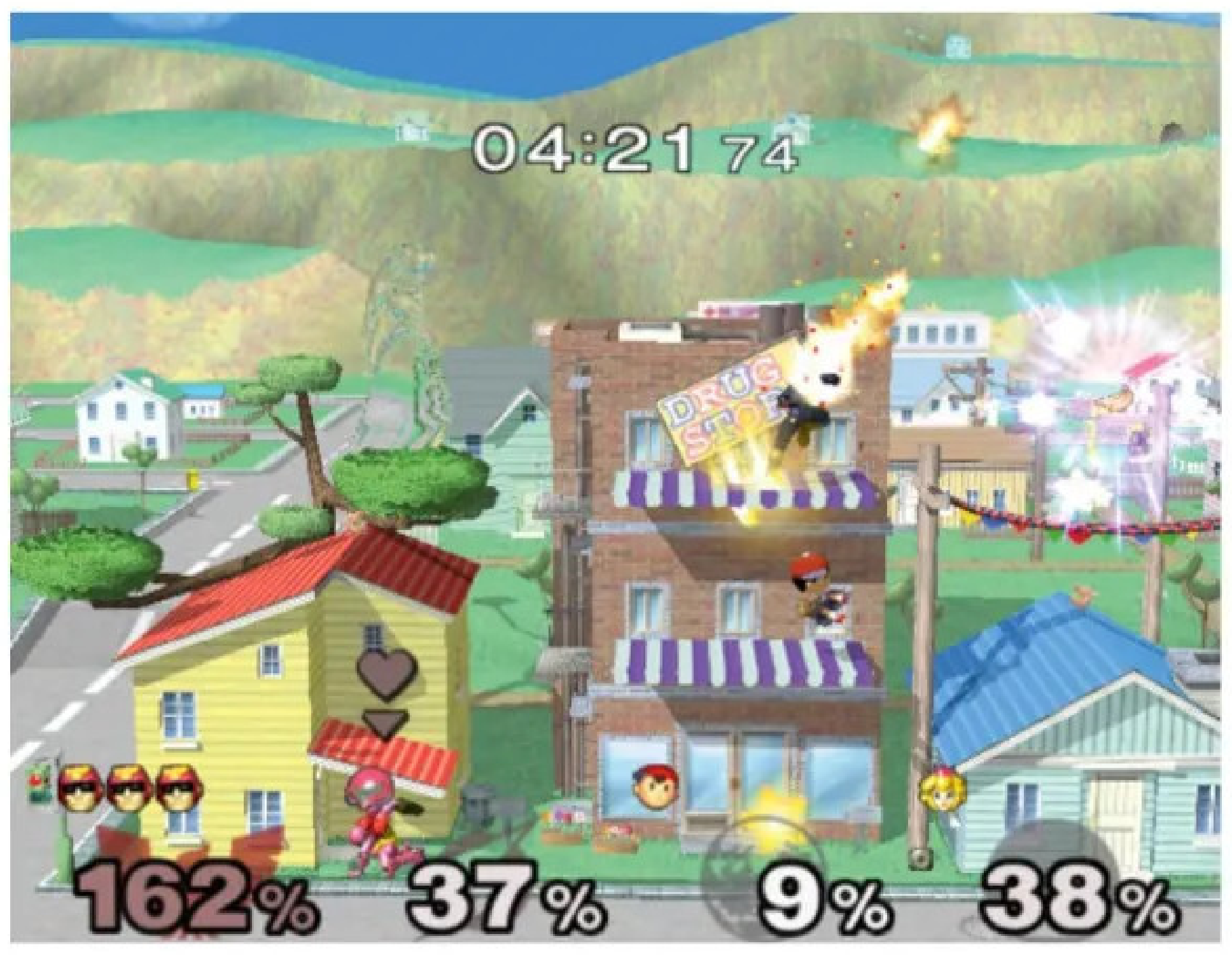
FUN FACTS ABOUT THE COMPETITIVE SUPER SMASH BROS MELEE SCENE

■ Argentinian *Melee* pro Hungrybox has estimated tournament winnings of over $384,000 over 15 years of competitive play.

■ Despite the enduring popularity of *Super Smash Bros Melee*, the game wasn't featured at the Evolution Championship Series until 2007.



■ The vast majority of stages are banned in tournament play, with only five being legal starter picks and one more legal as a counter-pick.

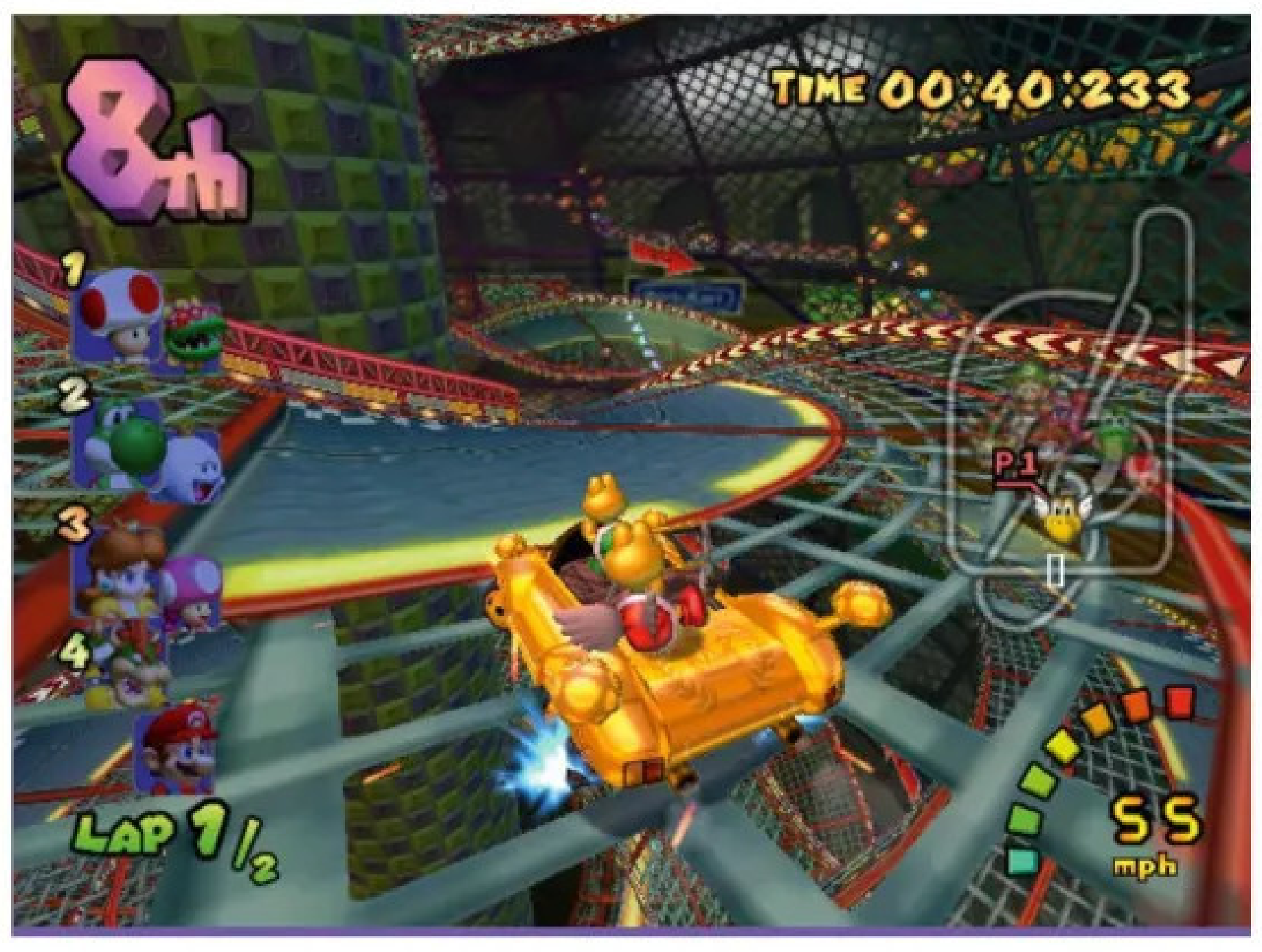


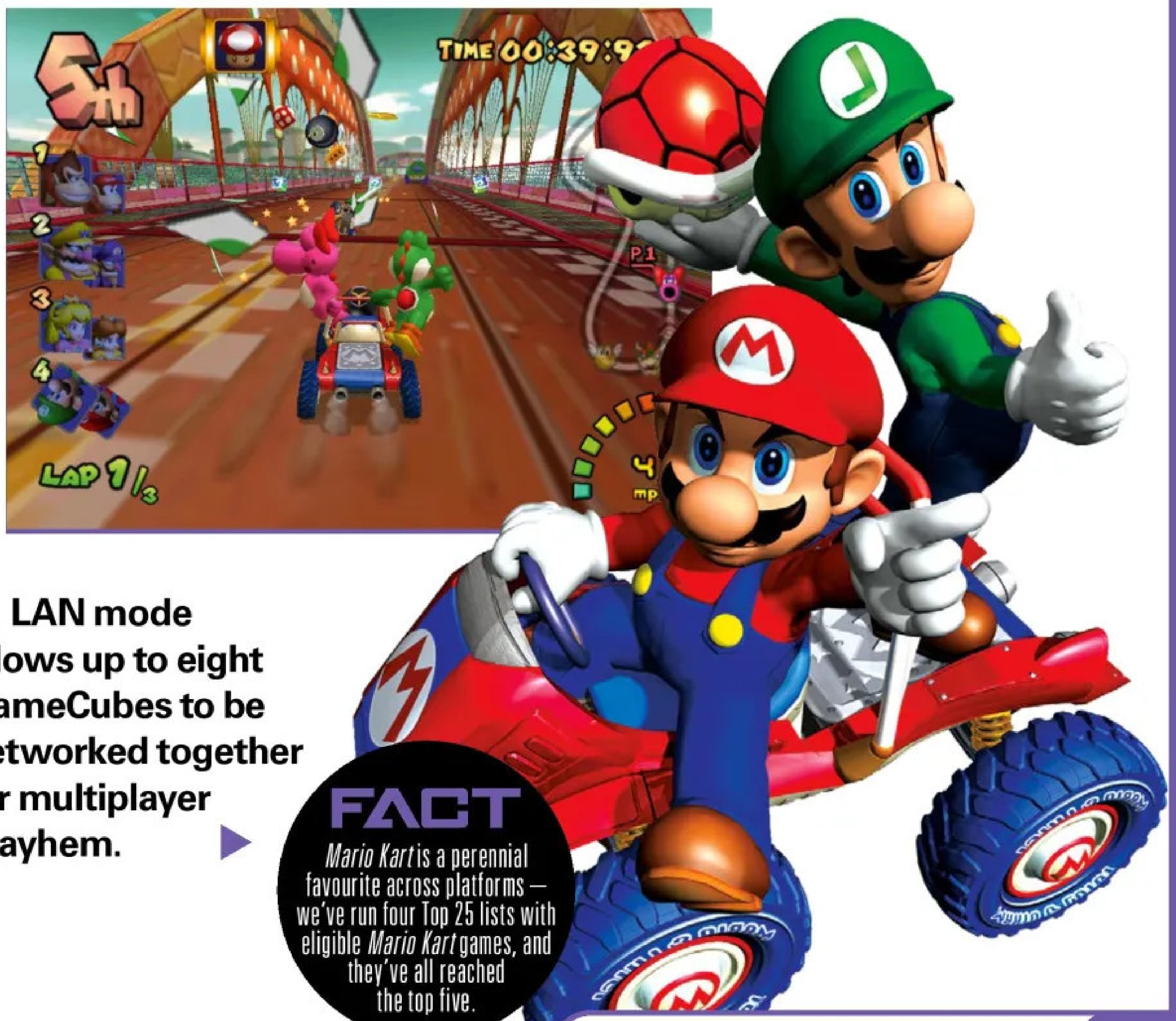
■ Swedish *Melee* pro Armada dropped out of Dreamhack Austin in 2017 because a controller wasn't malfunctioning how he wanted it to.

HOW MARIO KART DOUBLED THE FUN ON GAMECUBE

04 MARIO KART: DOUBLE DASH!!

■ DEVELOPER: **Nintendo EAD Tokyo**
■ GENRE: **Racing** ■ YEAR: **2003**





■ Each kart now has two drivers, allowing you to hold two items for increased tactical depth in combat

■ Characters and vehicles are now chosen separately, based on the weight class of your driving team.

■ New tracks like DK Mountain and Baby Park are some of the most popular in the history of the series.

■ Battle Mode returns, with the excellent new Shine Thief and Bob-omb Blast rule sets joining Balloon Battle.

■ LAN mode allows up to eight GameCubes to be networked together for multiplayer mayhem. ▶

FACT

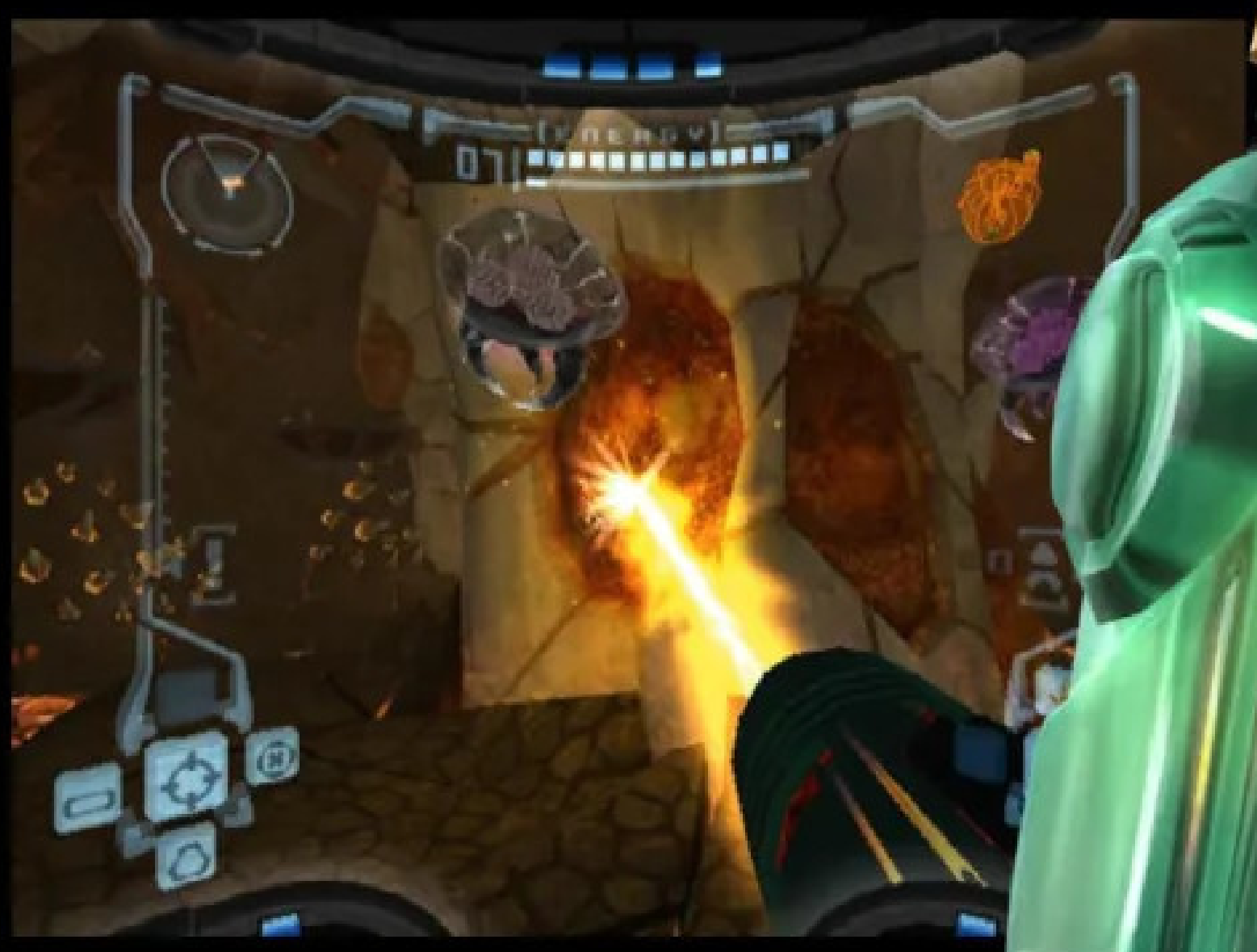
Mario Kart is a perennial favourite across platforms – we've run four Top 25 lists with eligible *Mario Kart* games, and they've all reached the top five.

SEE IT, SCAN IT, **SHOOT IT**

03 METROID PRIME

■ DEVELOPER: Retro Studios ■ GENRE: Action adventure ■ YEAR: 2002

■ *Metroid* always sold better in America than it did Japan, so it made plenty of sense for Texas-based Retro Studios to take on the series for its first 3D outing. Despite a tricky development phase, the team absolutely knocked it out of the park, creating a whole new game that carried the essential *Metroid* spirit. Rather than being an out-and-out blaster, the game is a first-person adventure in which exploring and scanning your environment is the order of the day. That's not to say that combat is off the menu, of course – it's definitely there, it just isn't highly emphasised outside of the game's great boss battles.



MORE TO EXPLORE

SAMUS ARAN'S POST-PRIME ADVENTURES

METROID PRIME 2: ECHOES

■ Seen earlier in this list, this GameCube sequel sees Samus battling against the Ing and a mysterious mimic known as Dark Samus.

METROID PRIME: HUNTERS

■ With the DS touchscreen substituting for a mouse fairly effectively, this handheld outing was free to focus more on the combat than anything else.

METROID PRIME 3: CORRUPTION

■ Moving on to the Wii, Samus gained another new aiming method – the Wii remote's pointer. This was later collected in *Metroid Prime Trilogy*.

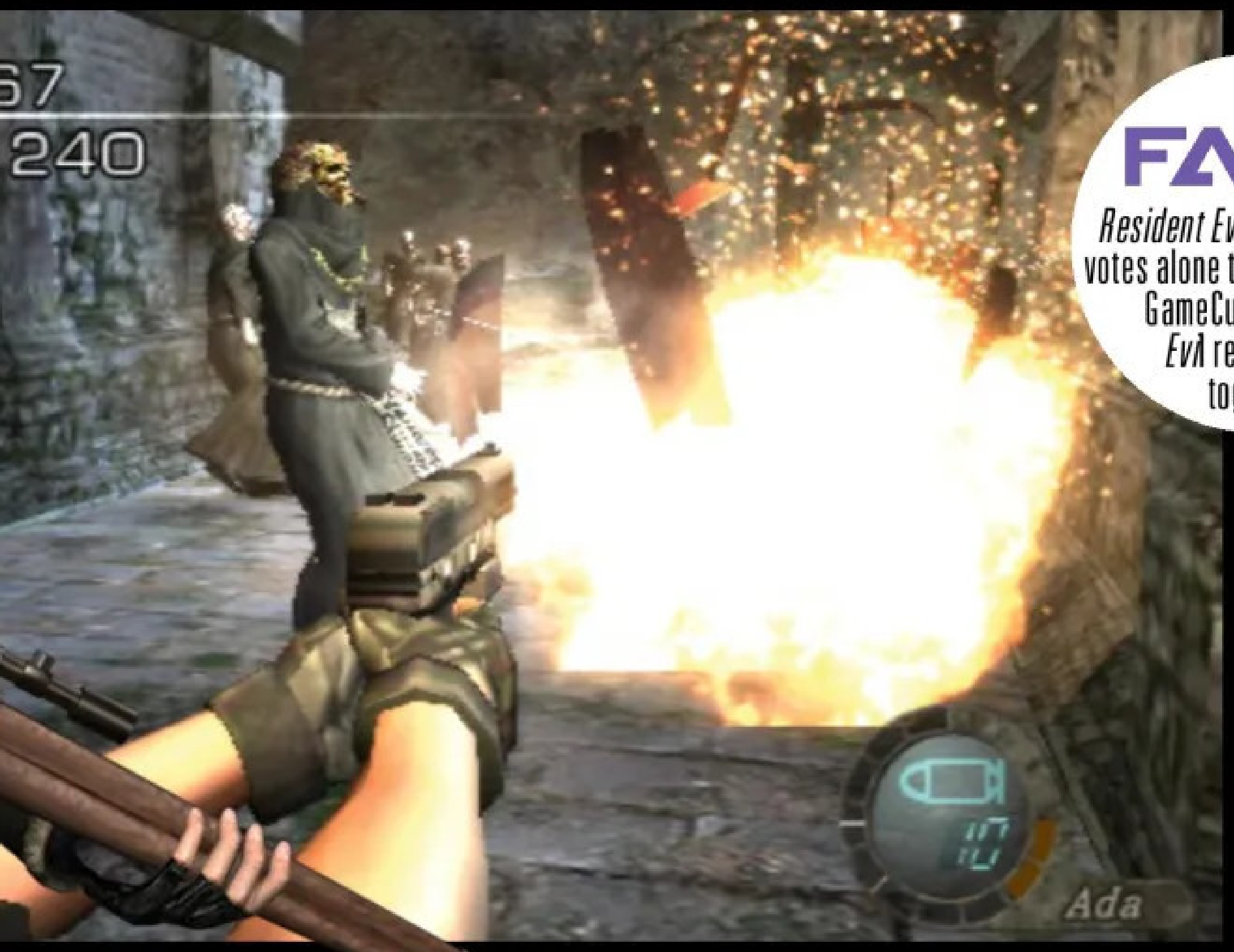
METROID PRIME: FEDERATION FORCE

■ A regular old marine is in the leading role here, rather than Samus herself. The change in emphasis didn't go down well with long-term *Metroid* fans.

FACT

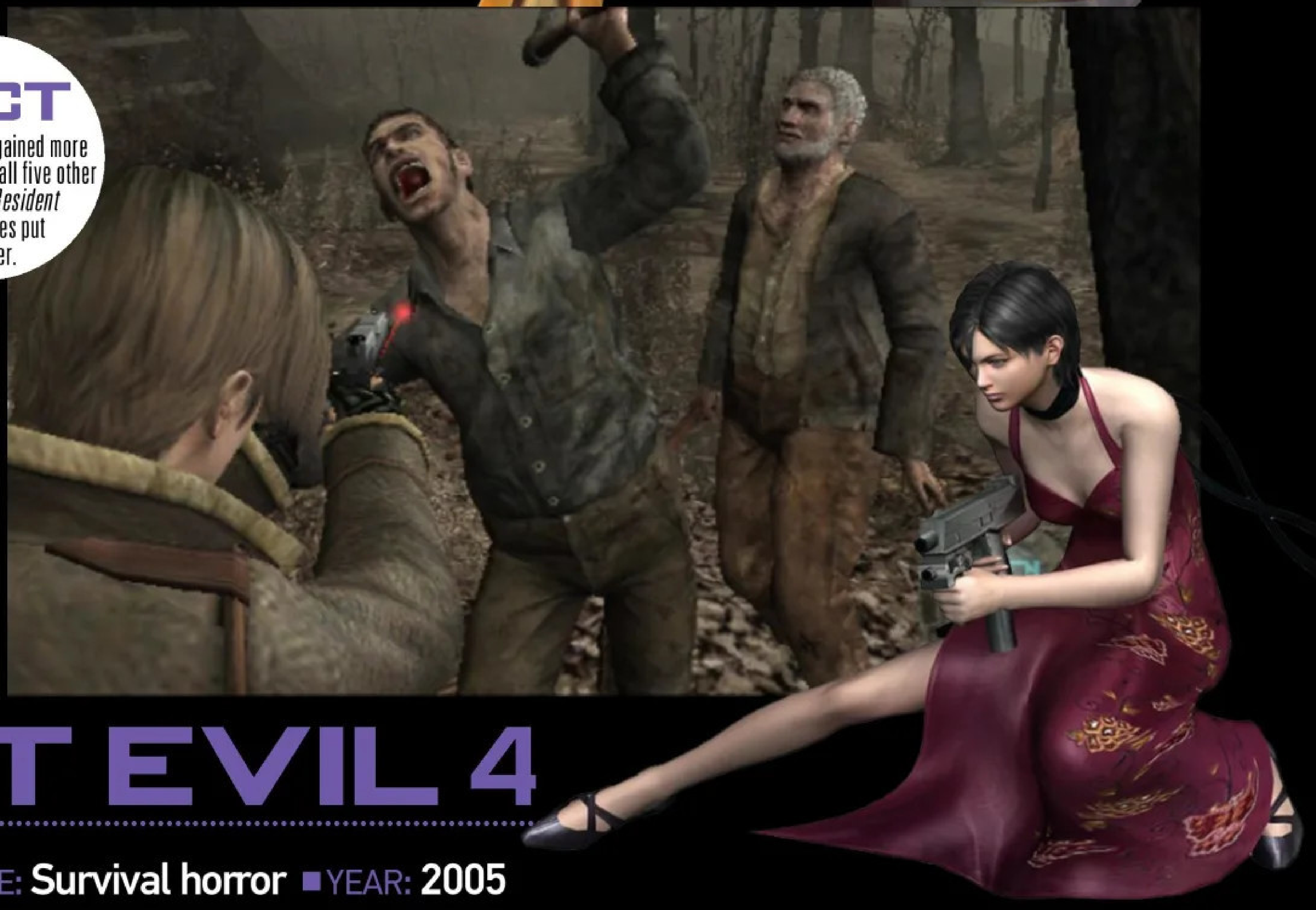
Here's the breakdown of how the *Metroid Prime* games were represented in your votes:

Metroid Prime only: 40%
Both *Metroid Primes*: 9.5%
Metroid Prime 2 only: 3.5%
Neither: 47%



FACT

Resident Evil 4 gained more votes alone than all five other GameCube *Resident Evil* releases put together.



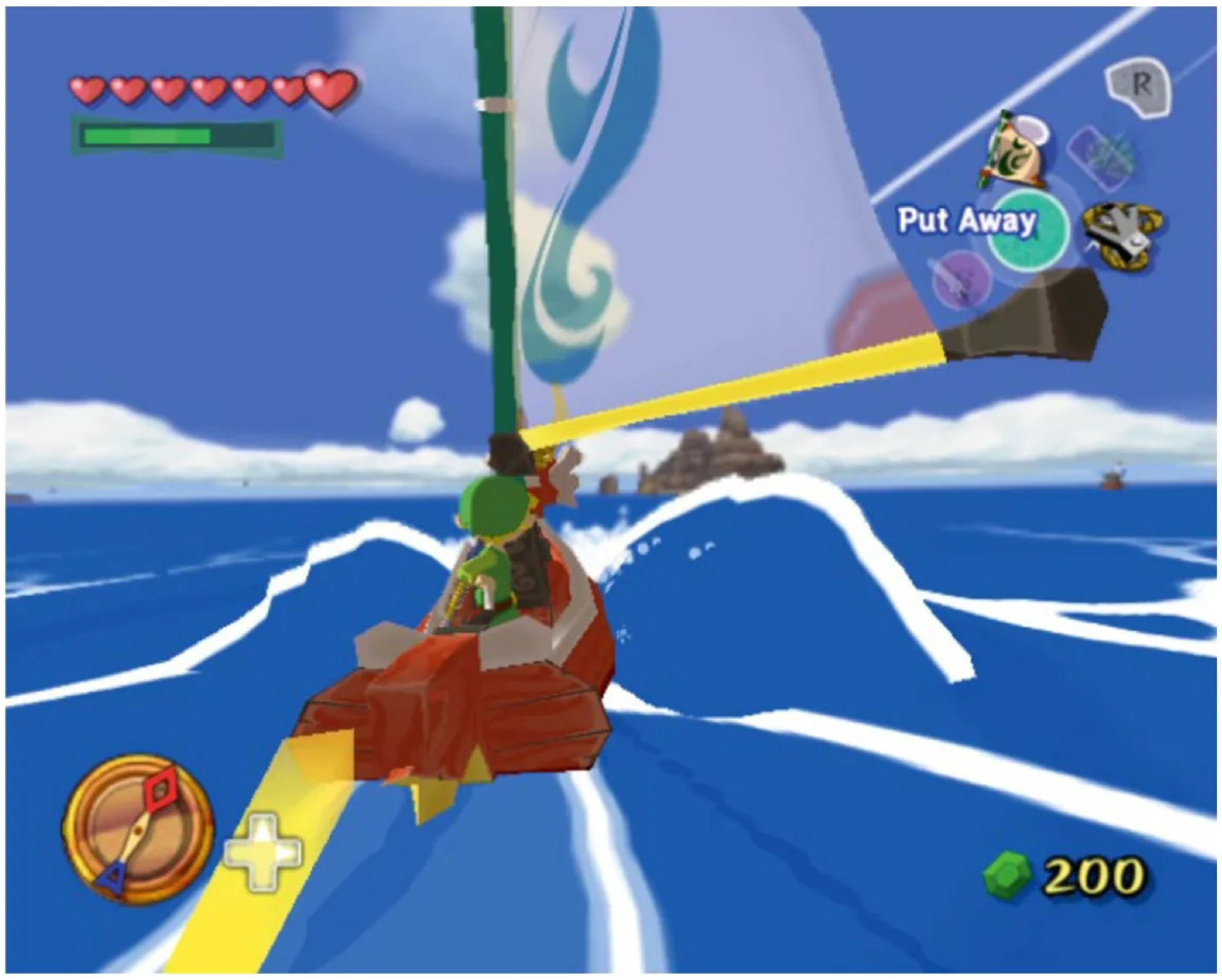
THE NEW **FACE OF FEAR**

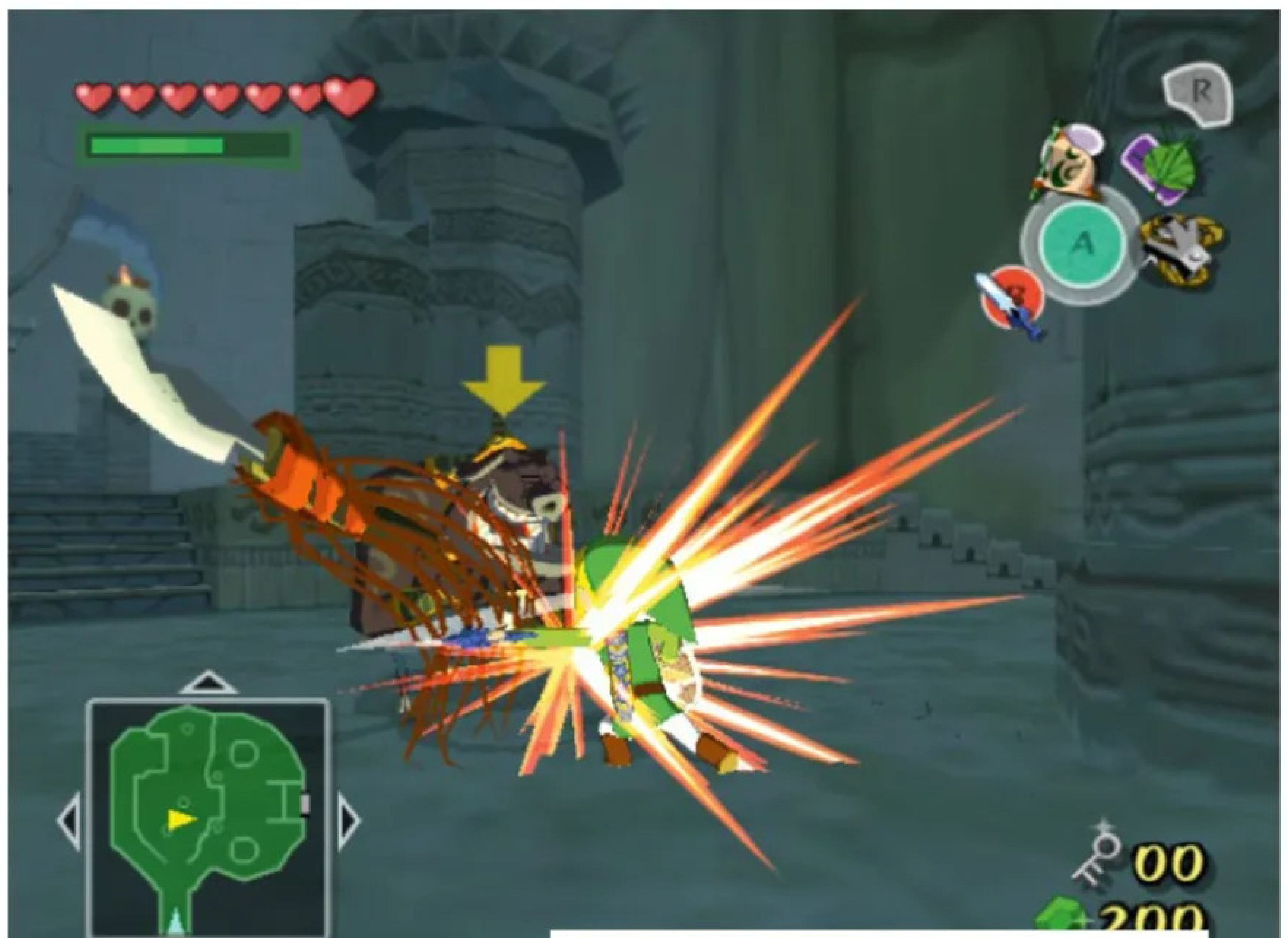
02 RESIDENT EVIL 4

■ DEVELOPER: Capcom Production Studio 4 ■ GENRE: Survival horror ■ YEAR: 2005

■ It seems like the best *Resident Evil* games are those that experience difficult development phases. Just as *Resident Evil 2* was scrapped and started again, Capcom spent a heck of a lot of time just deciding what *Resident Evil 4* should actually be, and even went so far as to release trailers for two different versions of the game that bore no resemblance to the final product. Thankfully, the result was a revolutionary entry in the series.

Resident Evil 4 followed Leon S Kennedy into rural Spain, on a mission to rescue Ashley Graham, the abducted daughter of the American president. When he arrives, he receives a hostile reception from the locals, victims of the Los Illuminados cult. This sets up *Resident Evil 4* as a much more action-oriented game than its predecessors – although you benefit from improved combat controls and more plentiful ammunition, the fear factor is still present as you find yourself swarmed by enemies. They're not just bullet fodder either, refusing to just stand around and get shot like the zombies of old, dodging your shots and working together to hunt you down. Add exciting boss fights, dramatic QTE sequences and graphics that pushed the GameCube to its limits, and you have a game that is worthy of such a high placement in this list.





SET SAIL FOR **ADVENTURE**

01 THE LEGEND OF ZELDA: THE WIND WAKER

■ DEVELOPER: **Nintendo EAD** ■ GENRE: **Action adventure** ■ YEAR: **2003**

After establishing the 3D templates for so many of its key series on the N64, Nintendo used the GameCube sequels to refine and enhance them – something you can see in games like *Mario Kart: Double Dash!!* and *Super Mario Sunshine*. At the same time, for a famously conservative company, Nintendo did take some big risks in the GameCube era. It launched the console without a *Mario* game, handed third-party developers the keys to some of its prized franchises, and allowed drastic gameplay changes in series like *Metroid* and *Star Fox*.

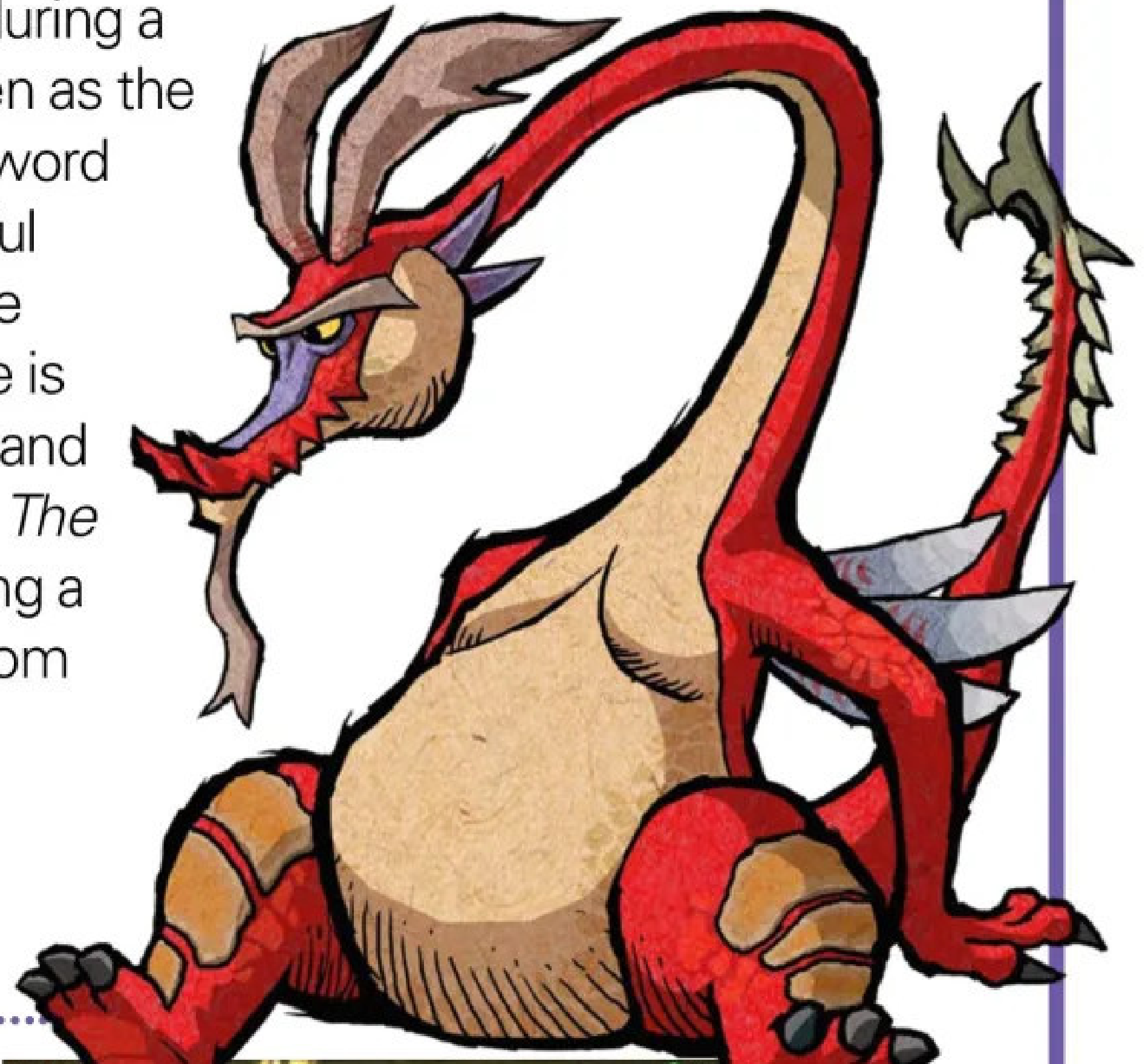
It's fitting that you've voted *The Legend Of Zelda: The Wind Waker* the best GameCube game, because it exemplifies both Nintendo's boldness and its conservatism. The cel-shaded style of the game was certainly a daring and unexpected choice, and there's no getting around the fact that it received a mixed reception when it was unveiled. For some, it was a sign that Nintendo was out of touch in an era where conventional wisdom suggested that games needed to be darker and edgier to appeal to the masses. Decades down the line, it's hard to see what all the fuss was about because the game looks magnificent.

Everything from Link's facial expressions to explosions is delivered with artistic flair, and the minimal texture usage has allowed the game to age gracefully, with it looking especially fine in its HD remaster on the Wii U.

Besides, beneath the new look this was the same 3D *Zelda* that players had grown to love. Removed from the time looping of *Majora's Mask*, *The Wind Waker* is a more traditional 3D *Zelda* in which the DNA of *Ocarina Of Time* is evident in everything, from Link's controls to dungeon design. The major new gameplay addition of sailing around the world and getting into naval battles is very exciting initially, and while there is maybe a tad too much boating, that's soon forgotten during a tricky puzzle, or forgiven as the music reacts to your sword strikes. Getting a faithful successor to one of the best games ever made is certainly no bad thing, and that's essentially what *The Wind Waker* is, ensuring a fantastic experience from start to finish.

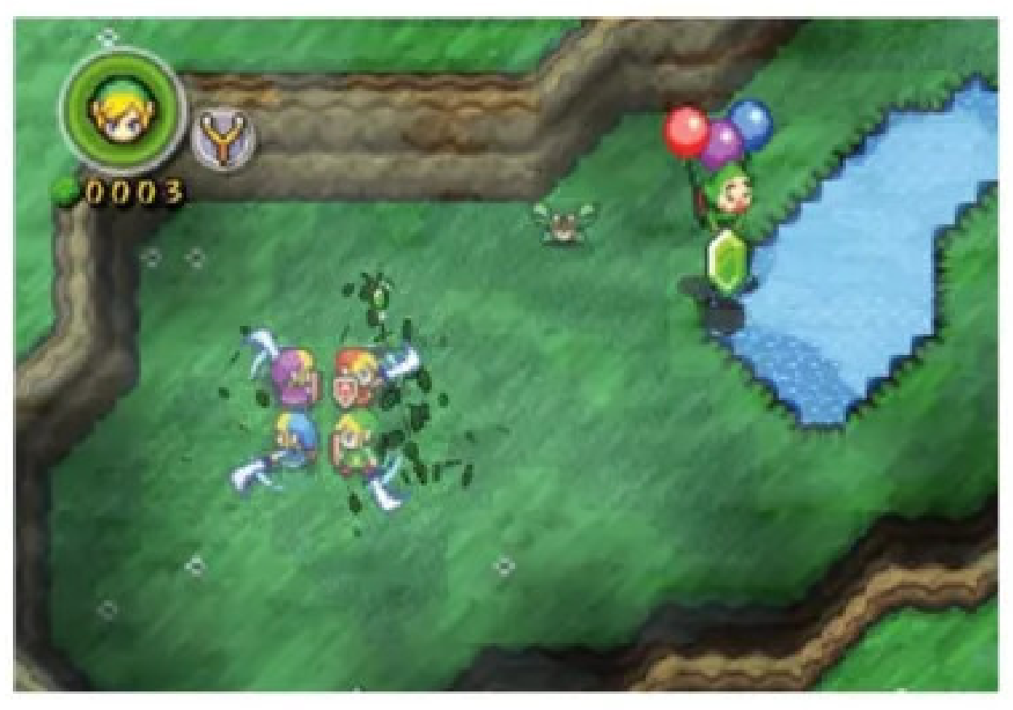
FACT

This game appeared on a whopping 70% of the top ten lists we received – 15% ahead of *Resident Evil 4*!



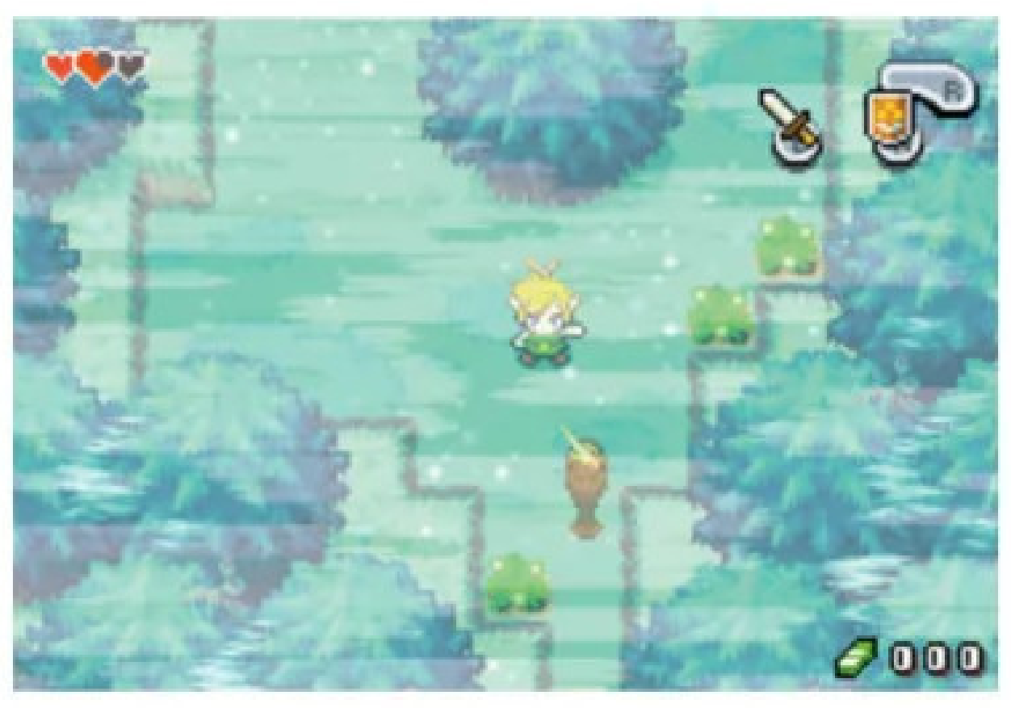
TOON LINK'S LEGACY

THE CEL-SHADED STYLE OF LINK'S ADVENTURE WAS NO ONE-OFF TRICK, AS THESE GAMES SHOW



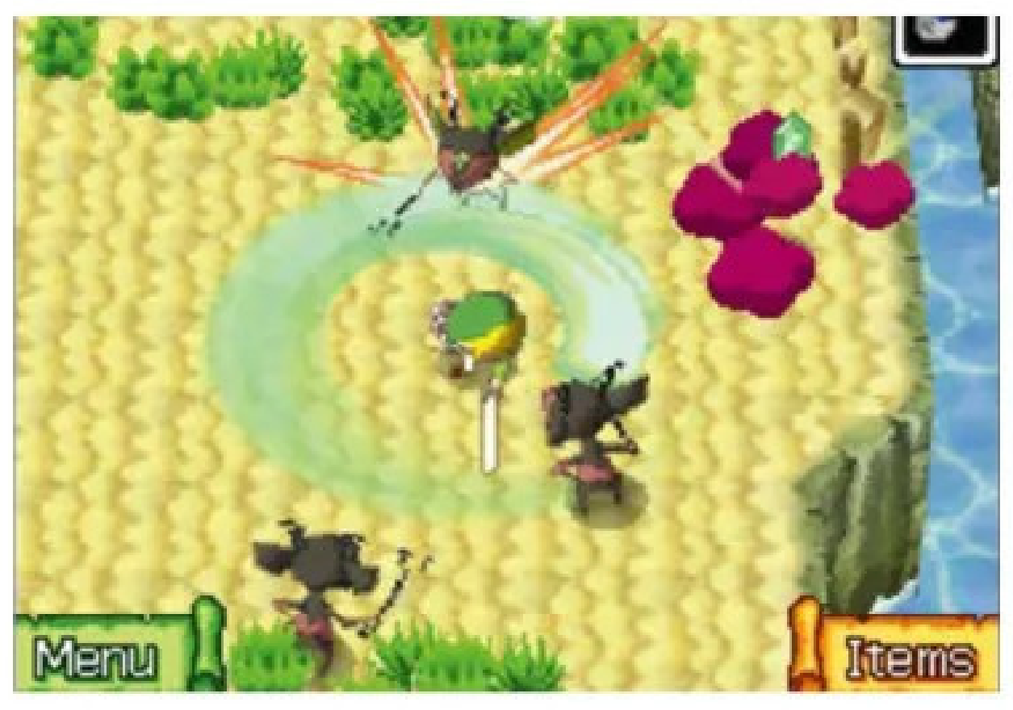
THE LEGEND OF ZELDA: FOUR SWORDS ADVENTURES

■ This one plays a little bit like *A Link To The Past*, but with the more modern Link joining forces with himself, himself and himself in a rare multiplayer outing. This was intended to be a showcase for the GameCube to Game Boy Advance link cable.



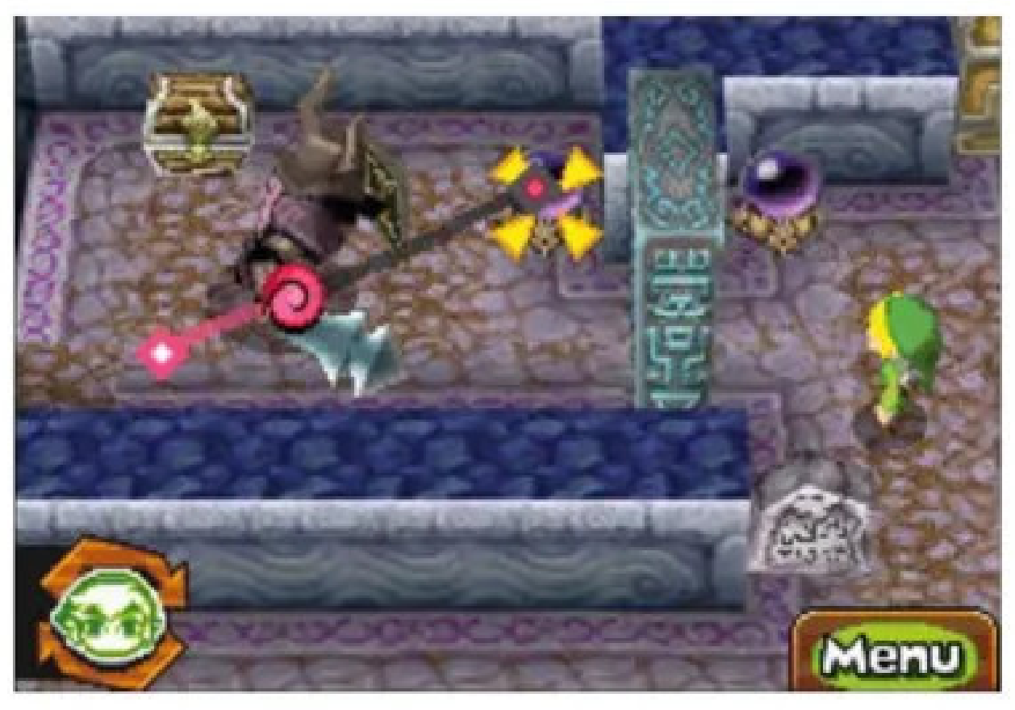
THE LEGEND OF ZELDA: THE MINISH CAP

■ Link finds a hat that allows him to shrink to tiny size here, in a game set between *Skyward Sword* and *Four Swords*. Despite that, the visual style is clearly based on *The Wind Waker*, starting a legacy of handheld games that adopted the cartoon look.



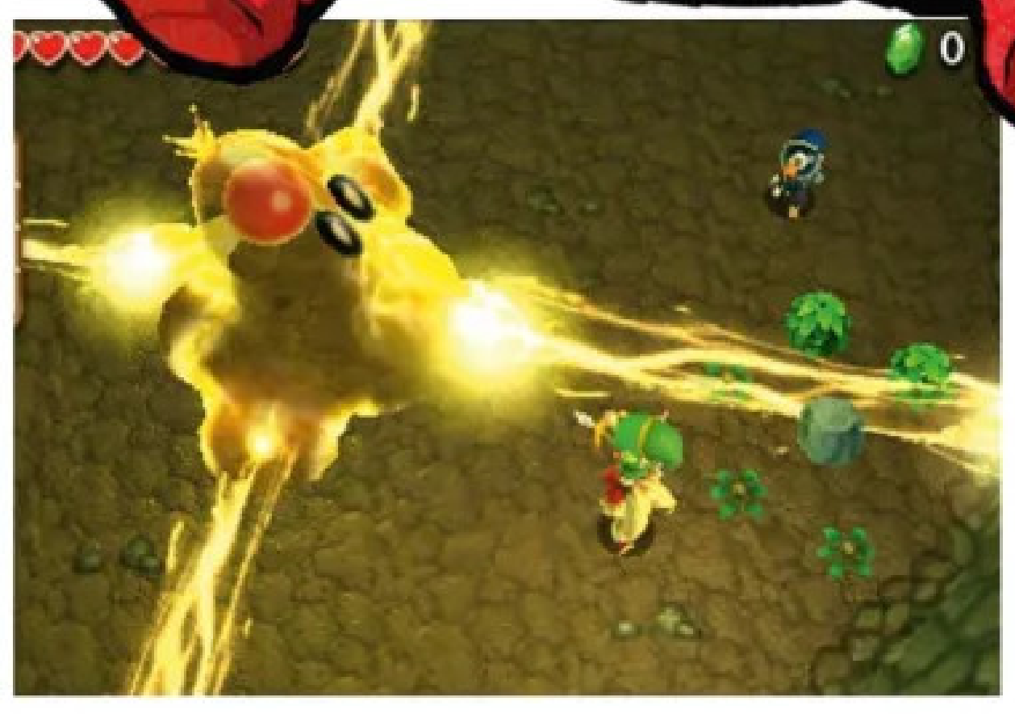
THE LEGEND OF ZELDA: THE PHANTOM HOURGLASS

■ This is a direct sequel to *The Wind Waker*, as you could probably guess by looking at the box art featuring Link sailing across the ocean once more. This DS game does its best impression of the cel-shaded look with the system's more limited 3D technology.



THE LEGEND OF ZELDA: SPIRIT TRACKS

■ This game still takes place in *The Wind Waker* timeline but a century after those events, and has Link travelling around New Hyrule by train. Since it's another DS game, the cartoon style is represented in a rather similar manner to that of *The Phantom Hourglass*.



THE LEGEND OF ZELDA: TRI FORCE HEROES

■ The most recent game to use our animated adventurer is this 3DS outing, another entry in the multiplayer line of *Zelda* games. Unusually, each Link has a hair colour that matches his clothing, meaning that the standard blonde look isn't to be seen here.

Hardware Heaven

Nintendo DS Fact

■ Contrary to popular belief, 'DS' does not stand for 'dual screen' – Nintendo stated that the intended meaning was 'developers' system', due to the new potential its twin screens offered to game creators.

PROCESSOR: ARM946E-S (67MHZ), ARM7TDMI (33MHZ)
RAM: 4MB
GRAPHICS: TWO THREE-INCH LCD SCREENS (256X192), 18-BIT COLOUR DEPTH
AUDIO: 16-CHANNEL PCM8/PCM16/IMA-ADPCM, BUILT-IN STEREO SPEAKERS, HEADPHONE JACK
MEDIA: CARTRIDGE (TWO SLOTS – PROPRIETARY DS CARTS AND GAME BOY ADVANCE CARTS)
MEDIA: CASSETTE, OPTIONAL 5.25-INCH FLOPPY DISK INTERFACE, OPTIONAL HARD DISK INTERFACE

Nintendo DS

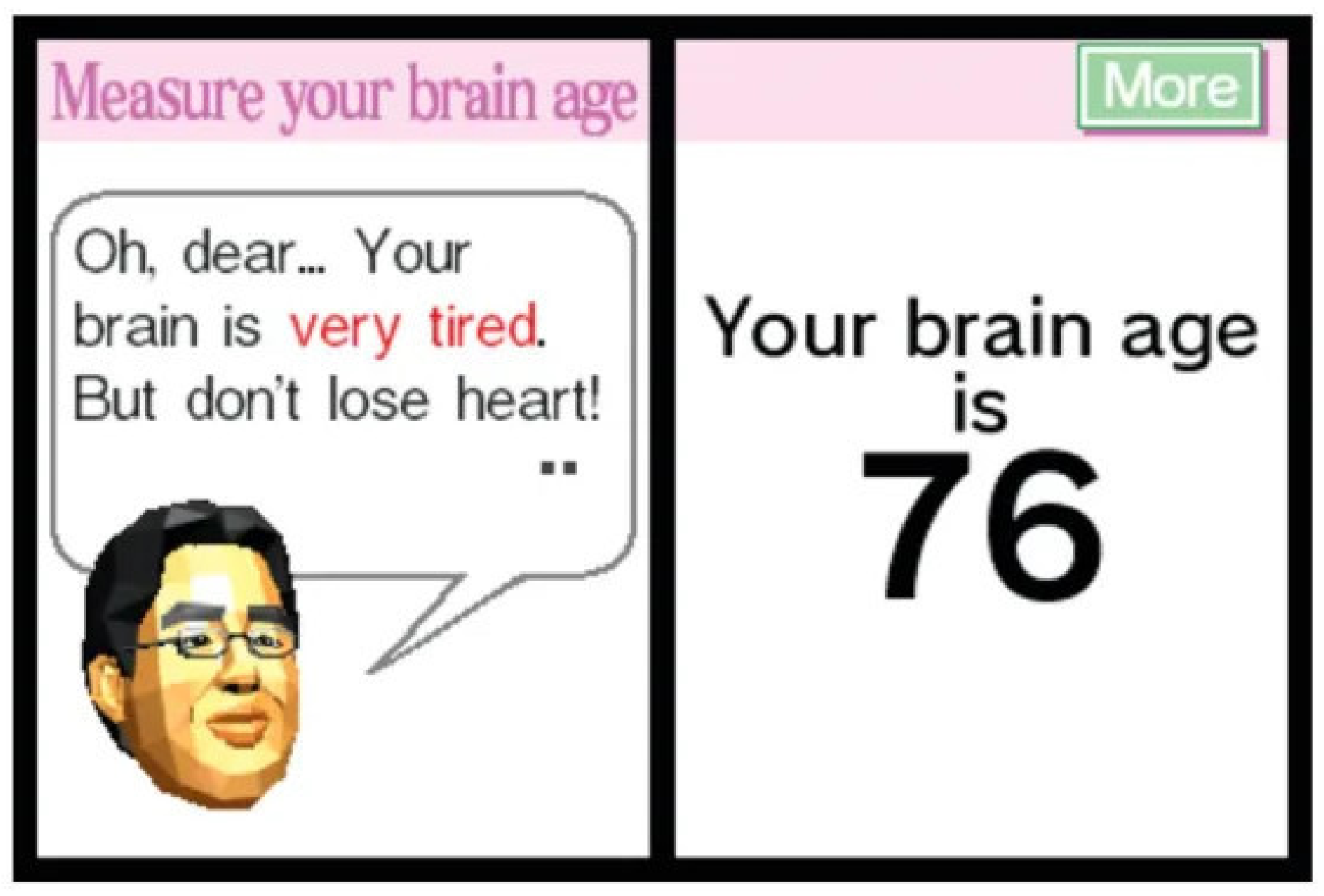
» **MANUFACTURER:** Nintendo » **YEAR:** 2004 » **COST:** £99.99/$149.99 (launch), (£20+ today)

Having been the dominant force in the handheld sector for over two decades, Nintendo finally started to feel the squeeze around the turn of the millennium as the explosive rise of mobile gaming transformed portable gaming. Mobile games were simple, cheap and accessible, with basic touchscreen interfaces letting anyone grab a quick gaming session on the go via a device they already carried with them everywhere. So in 2005, Nintendo returned fire at this unlikely opponent with a new handheld console that delivered the best of both worlds – classic button layouts and support for traditional gaming experience, but with the potential to tap into this new casual audience thanks to its optional stylus control on the lower of its two screens.

While its launch window was plagued with slews of shallow gimmick releases to show off the possibilities of touchscreen control, it wasn't long before developers had started to take a leaf out of Nintendo's own book and came out with inventive new games that brought together the traditional and the new to great effect. Wireless capabilities allowed select games to be taken online, but it was the influx of new players brought in by a library of simple touchscreen-focused releases that shot the DS to meteoric popularity – this new audience drove sales up to over 150 million, making the DS the most successful handheld of all time.

EDITOR'S CHOICE

Dr Kawashima's Brain Training: How Old Is Your Brain?



Measure your brain age

More

Oh, dear… Your brain is very tired. But don't lose heart!

Your brain age is

76

We're not going to pretend that this novelty slice of pseudoscience is the DS' best game, but it's hands-down one of the platform's most important releases. Between the handheld's low cost and touch-based interface, and the game's reliance on simple puzzles and tests, the barrier for entry to gaming was lowered to allow a whole new generation of (typically older) players to pick up and enjoy a Nintendo console. Marketing material frequently went after this demographic following the game's success, and much of the DS' own success is down to accessible titles like this bringing in a new audience.

Mario Kart DS

BLUE SHELL THE WORLD

» DS » 2005 » NINTENDO EAD

If you want to start a contentious debate, just rank the entries in the *Mario Kart* series – you'll soon reveal the *Double Dash!!* diehards and *64* sceptics. I won't do a full ranking for that very reason, but I will say that *Mario Kart DS* is easily in my personal top three. It's the last one before they changed the drifting mechanic, and it has some truly awesome tracks like Waluigi Pinball, Airship Fortress and Luigi's Mansion. But in truth, my fond memories of the game have as much to do with the DS itself as the game design.

I was pretty suspicious of the DS when it was first announced. Did a second screen really enhance gaming that much? Could a touch screen really be that transformative? I wasn't convinced. But it turned out to be revolutionary in a much more mundane way. I hadn't regularly played multiplayer games on older handhelds, mostly because they were a pain to set up – I never had a link cable of my own, and save for *Pokémon*, most of my friends had different games to me. The DS had both local and online wireless connectivity, and download play for those who didn't have their own cartridges. Suddenly, handheld multiplayer was relatively hassle free.

As a result, *Mario Kart DS* was the first handheld game that I regularly enjoyed in multiplayer, and I have so many fond memories of doing so. Finding a local pub with free Wi-Fi just to experience an online race for the first time. Hanging out with my friends at the back of Summer Of Sonic, furiously battling for first place. Countless sneak attacks in the bar at Namco's County Hall arcade in London, nefarious moves that made my friends shout, "Who's playing as Yoshi?!" So many fantastic moments to treasure, and half of them probably wouldn't have happened if I'd had to remember to bring a link cable. ✱

TIME 2:29:060
2x
1
2
3
4
5
6
7

Hardware Heaven

Wii

» **MANUFACTURER:** Nintendo » **YEAR:** 2006
» **COST:** £179.99 (launch), £25+ (today, boxed), £20+ (today, unboxed)

Nintendo had once dominated the home-console world, but after three successive generations of declining sales, the company found itself in third place behind Sony and Microsoft. Understanding that producing another conventional machine was futile, Nintendo pivoted towards a design which emphasised affordable, accessible gaming, leaving the pursuit of power and multimedia dominance to its wealthier rivals. The result was the Wii, a comparatively diminutive console which didn't offer high-definition output or DVD playback, but did include an innovative motion-sensing controller that resembled a TV remote control.

The glossy white body of the console was clearly inspired by the design of contemporary Apple products, and while the name initially drew some criticism, the public quickly embraced the Wii. The pack-in game *Wii Sports* was a brilliant means of getting families to understand the console, paving the way for games like *Wii Fit* and *Just Dance 3* to become hits alongside more traditional fare such as *Super Mario Galaxy*. The Wii became Nintendo's most successful home console to date in 2009, but sales momentum slowed afterwards as rival platforms embraced motion controls. *

POWER
RESET

Wii fact

■ The original RVL-001 model of the Wii supports GameCube games and peripherals. The revised RVL-101, introduced in 2011 and sometimes known as the Family Edition, does not.

PROCESSOR: 32-BIT IBM BROADWAY POWERPC CPU (729 MHZ)
GRAPHICS: ATI HOLLYWOOD CUSTOM GPU (243 MHZ, 3 MB EMBEDDED DRAM, 24 MB 1T-SRAM)
STORAGE: 512 MB INTERNAL FLASH STORAGE, SD CARD (UP TO 32GB, OPTIONAL), GAMECUBE MEMORY CARD (OPTIONAL, RVL-001 ONLY)
MEDIA: WII OPTICAL DISC (4.7/8.5 GB), GAMECUBE OPTICAL DISC (1.46 GB, RVL-001 ONLY)
NETWORK: 802.11B/G WIRELESS, ETHERNET (OPTIONAL)
SYSTEM SOFTWARE: WII SYSTEM SOFTWARE
AUDIO: 5.1 CHANNEL DOLBY PRO LOGIC II
RAM: 64 MB 1T-SRAM

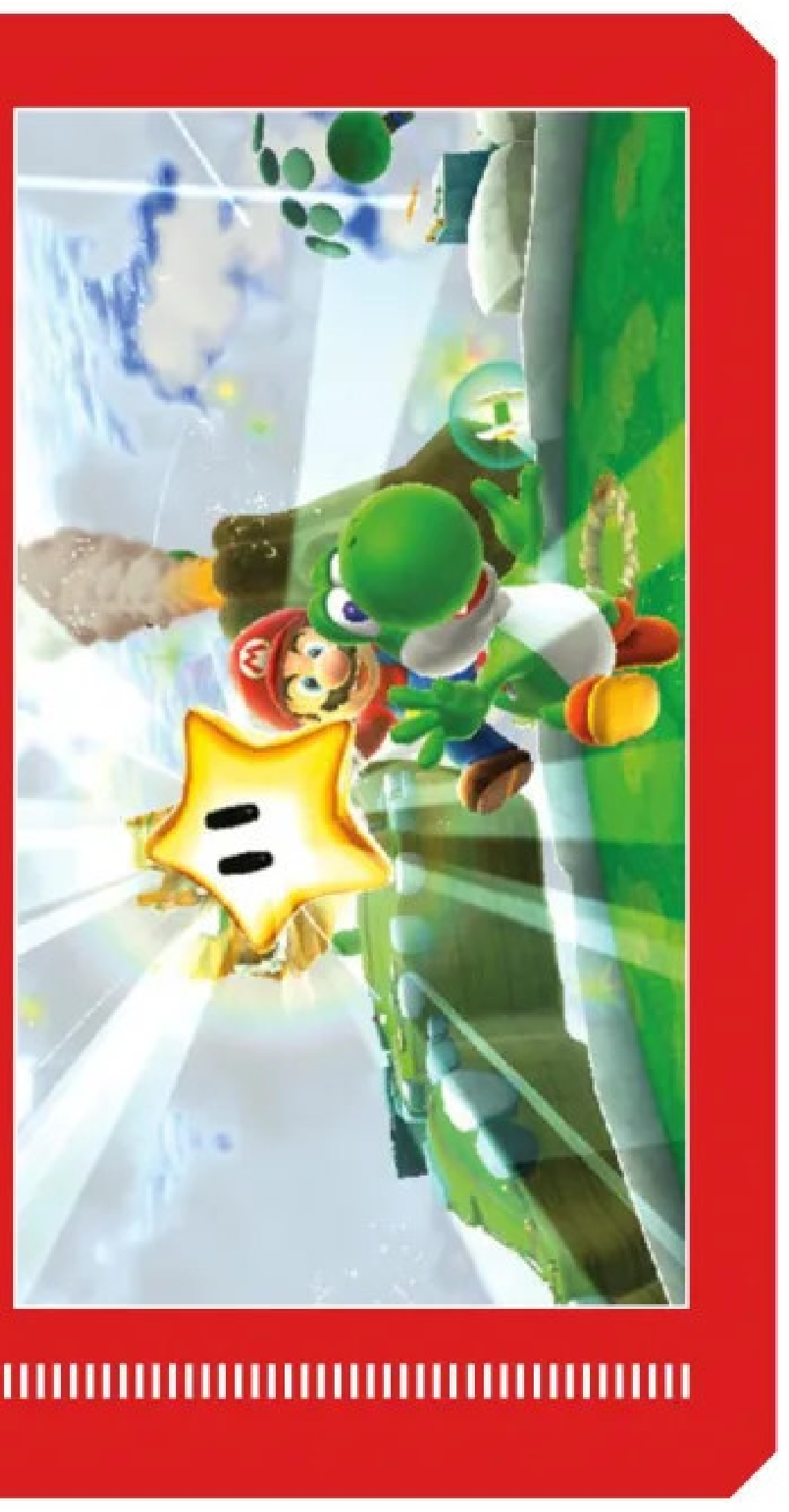
Wii
EJECT
Wii
RVL-003
MADE IN CHINA
CE 0125
ACN 060 566 083
FCC ID: PO0-WC45
IC: 4250A-WC45
HOME

EJECT
32
RESET
POWER

ESSENTIAL GAME

Super Mario Galaxy 2

The original *Super Mario Galaxy* was a landmark release for the Wii, but these days you can get it for the Switch as part of *Super Mario 3D All-Stars*. Its superb sequel remains exclusive to the Wii though, and it remains one of the finest games ever made. Hopping between planetoids of platforming challenges is still great fun, and only improved by the addition of new power-ups, the return of Yoshi and a higher level of challenge throughout the game. It's essential for anyone with an interest in the genre.



Wii Sports

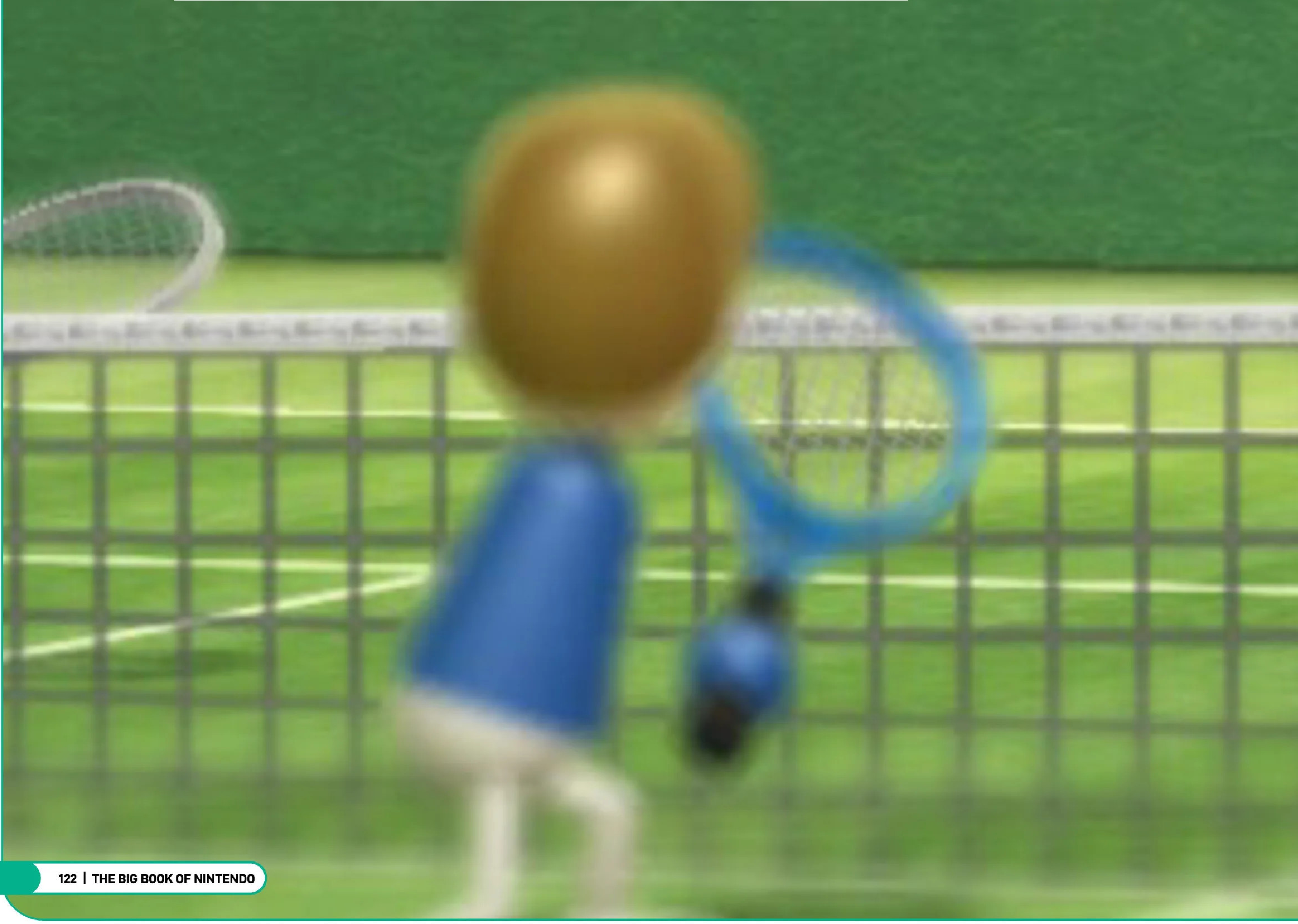
“TARA, PLEASE DON’T BREAK THE TV”

» WII » 2006 » NINTENDO

I’m so glad that I was at university when the Wii came out. It was really the perfect environment for the system – we had plenty of guests for the multiplayer games, our living room was spacious enough to make motion controls enjoyable, and honestly, swinging stuff around is even more fun when you’re a little bit tipsy. I know what you’re thinking – “What got broken?” Given all the stories of Wii remotes being thrown through TVs, it was amazing that nothing did, though I do shudder whenever I remember a good friend narrowly missing the TV during a heated game of bowling on *Wii Sports*. The clatter when my controller hit the wall… ouch.

That friend wasn’t exactly a big gamer, but then very few of the people I played *Wii Sports* with were. That was the beauty of the game, and more broadly the Wii’s motion controls – anyone could understand it, from your eight-year-old nephew to your 80-year-old nan. All you needed to do was hold the nonthreatening remote control and *do the thing*. *Wii Sports* was the perfect game to demonstrate that. Boxing? Make punching motions. Playing tennis? Swing that thing like a tennis racket. When you got it out for that first time on Christmas day, everyone wanted a go.

The Noughties, as we like to call them in this magazine, was the decade where breakthroughs in game control meant that everybody became a gamer. Casual audiences loved the *EyeToy*, but they weren’t picking up PS2 consoles to get them. Today’s casual gaming market is largely cordoned off from the ‘serious’ games machines, confined to the smartphones that gained popularity later in the decade – and, arguably, picked up the audience that used to poke at *Dr Kawashima’s Brain Training* on the DS. But the Wii was the bridge between the two worlds – motion control technology offered exciting possibilities for hardcore gamers, and experiences compelling enough to convince casual players to buy dedicated gaming hardware. It didn’t matter how interested you were in games beforehand – *everyone* played *Wii Sports*, making it a true cultural phenomenon. ✱



me
WiiSports

Switch

» MANUFACTURER: Nintendo **» YEAR:** 2017 **» COST:** £279.99 (launch), £120+ (today, boxed), £100+ (today, unboxed)

After years of inconsistent home console sales that culminated in the Wii U's failure at retail, Nintendo looked to its decades of dominance in handheld gaming and asked a simple question – why not make a machine that fulfils both roles? The result was the Switch, a handheld console with a docking station that allowed it to be played on a TV with minimal effort. The console itself resembles a regular tablet computer, with detachable Joy-Con controllers – initially available in grey or a red and blue set – that connect to the system on rails. Joy-Cons function as a pair or individually, meaning that every system is multiplayer-ready out of the box.

The appeal of the hybrid functionality of the console, as well as a superb first year of game releases, ensured that initial scepticism soon gave way to strong sales. Nintendo followed the system with a purely handheld Lite model in 2019, and an updated hybrid model with an OLED display and 64GB internal storage in 2021. Combined, these models have sold over 122 million units to date, putting the Switch behind only the PlayStation 2 and Nintendo DS as the third best-selling console of all time.

NINTENDO SWITCH

NINTENDO
SWITCH

000026810
136
X
Y
A
B

EDITOR'S CHOICE

Splatoon 2

Nintendo had proven the appeal of a family-friendly squad-based shooter with the original *Splatoon* on the Wii U, but the series really came into its own when the Inklings returned on the Switch. Single players had plenty more to do than in the original game, especially if they picked up the *Octo Expansion* DLC, while the multiplayer options were improved with new weapons and the co-op Salmon Run. Better yet, the inclusion of support for local network matches means that the multiplayer game will always be available for players to enjoy, regardless of whether servers remain online.

Nintendo Switch Fact

■ To discourage children from swallowing the relatively small Nintendo Switch game cards, each is coated with denatonium benzoate – an unpleasant, bitter-tasting chemical compound.

PROCESSOR: 64-BIT QUAD CORE ARM CORTEX-A57 (1.02 GHZ)
RAM: 4GB LPDDR4
DISPLAY: 6.2 INCH 720P LCD, HDMI OUTPUT UP TO 1080P
GRAPHICS: NVIDIA GM20B (UP TO 768 MHZ, UP TO 393 GFLOP/S)
AUDIO: 16-CHANNEL PCM8/PCM16/IMA-ADPCM, BUILT-IN STEREO SPEAKERS, HEADPHONE JACK
MEDIA: NINTENDO SWITCH GAME CARD (UP TO 64GB)
STORAGE: 32GB EMMC FLASH MEMORY, MICROSD CARD (OPTIONAL, UP TO 2TB)
NETWORKING: 802.11AC WIRELESS CONNECTIVITY, ETHERNET (OPTIONAL, VIA USB ADAPTER)

SYSTEM
SUPPLIED BY
**EVAN
AMOS**

PERFECT TEN

NINTENDO SWITCH

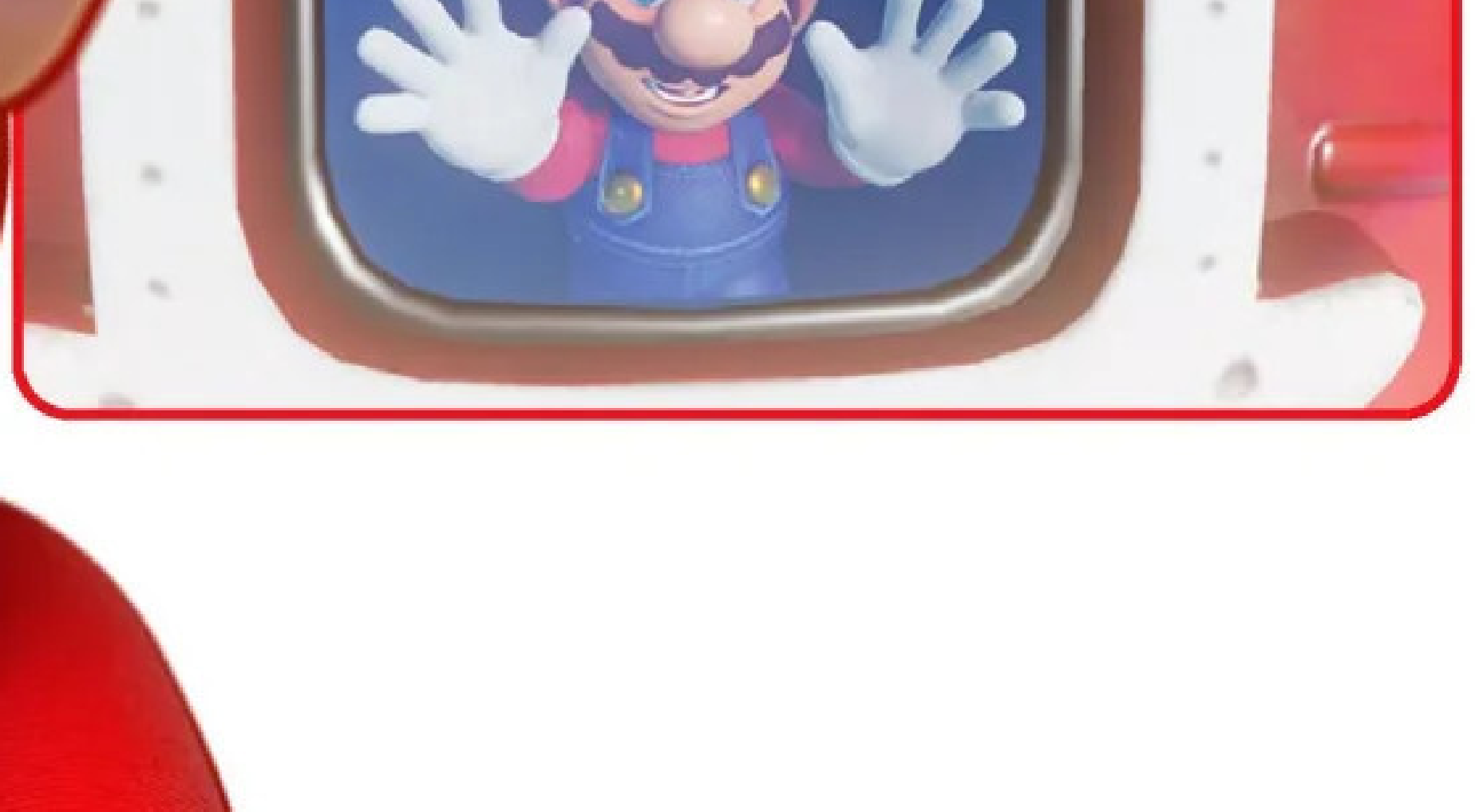
Nintendo captured lightning in a bottle once again with its hybrid console. Here are ten must-plays that made their debut on the sublime Switch

Super Mario Odyssey

Hats off

Any 'essential games' list for a Nintendo console is incomplete without an appearance from the plucky plumber, and *Odyssey* is one of the best *Mario* games in the entire series. Introducing a new 'Capture' feature, where the heroic handyman can possess his enemies by flinging his hat at them, infuses a healthy dose of fun into the usual *Mario* formula.

Cap that off with best-in-class platforming, timeless visuals and robust customisation options, and you have a genre-defining adventure you would do well to embark on.

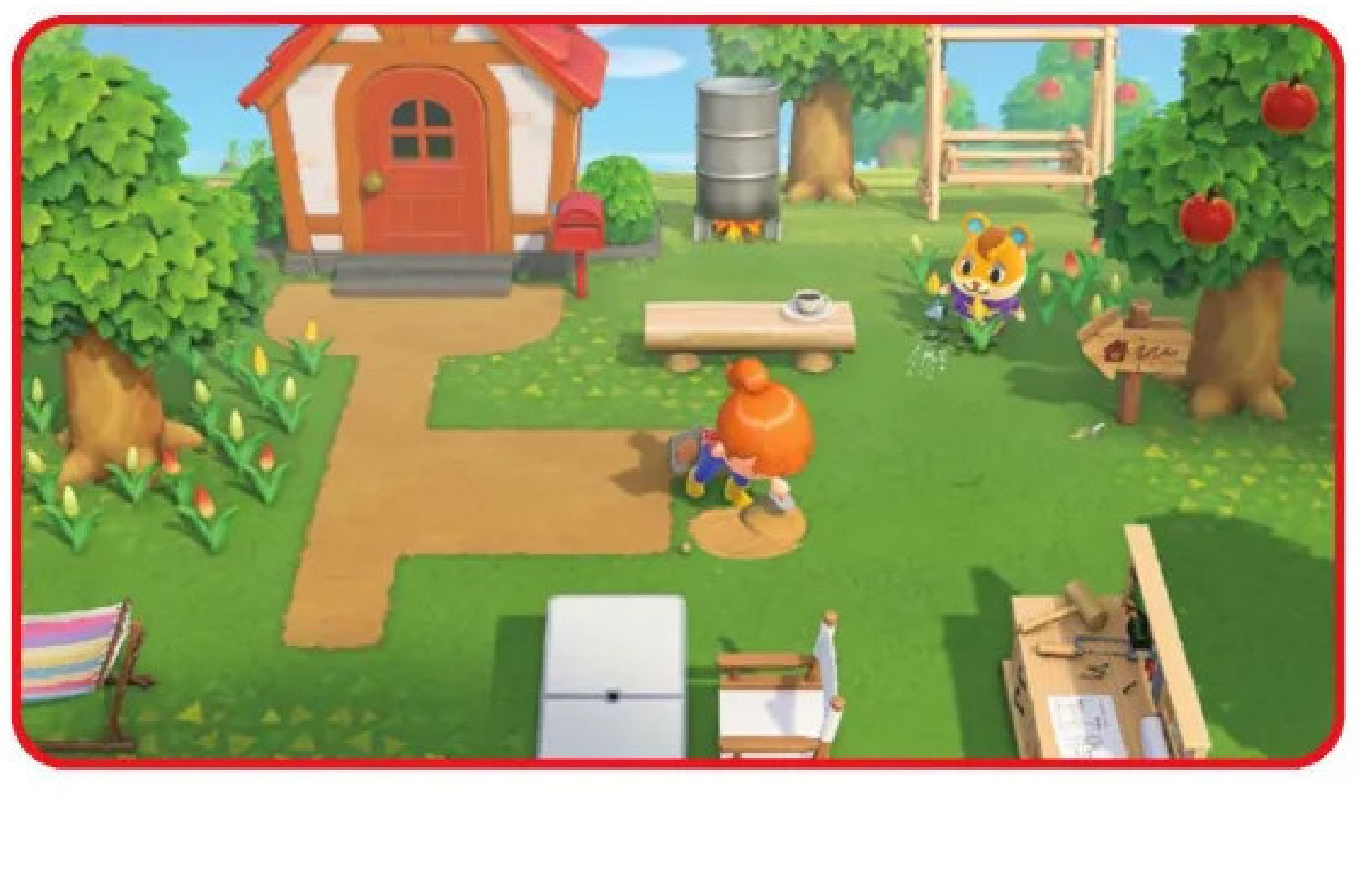


Animal Crossing: New Horizons

Island in the sun

This easy-breezy life sim might have got many through the stressful times of Covid-19 lockdowns, and for a good reason. Taking charge of an island paradise of potential, it's up to you to spruce up your new home – and this low-stakes premise works wonders as a mindful activity.

You can entice new NPC villagers to make your island their home, plus invite your friends and share creative endeavours together, collect fossils or simply sit back and watch the sunset.

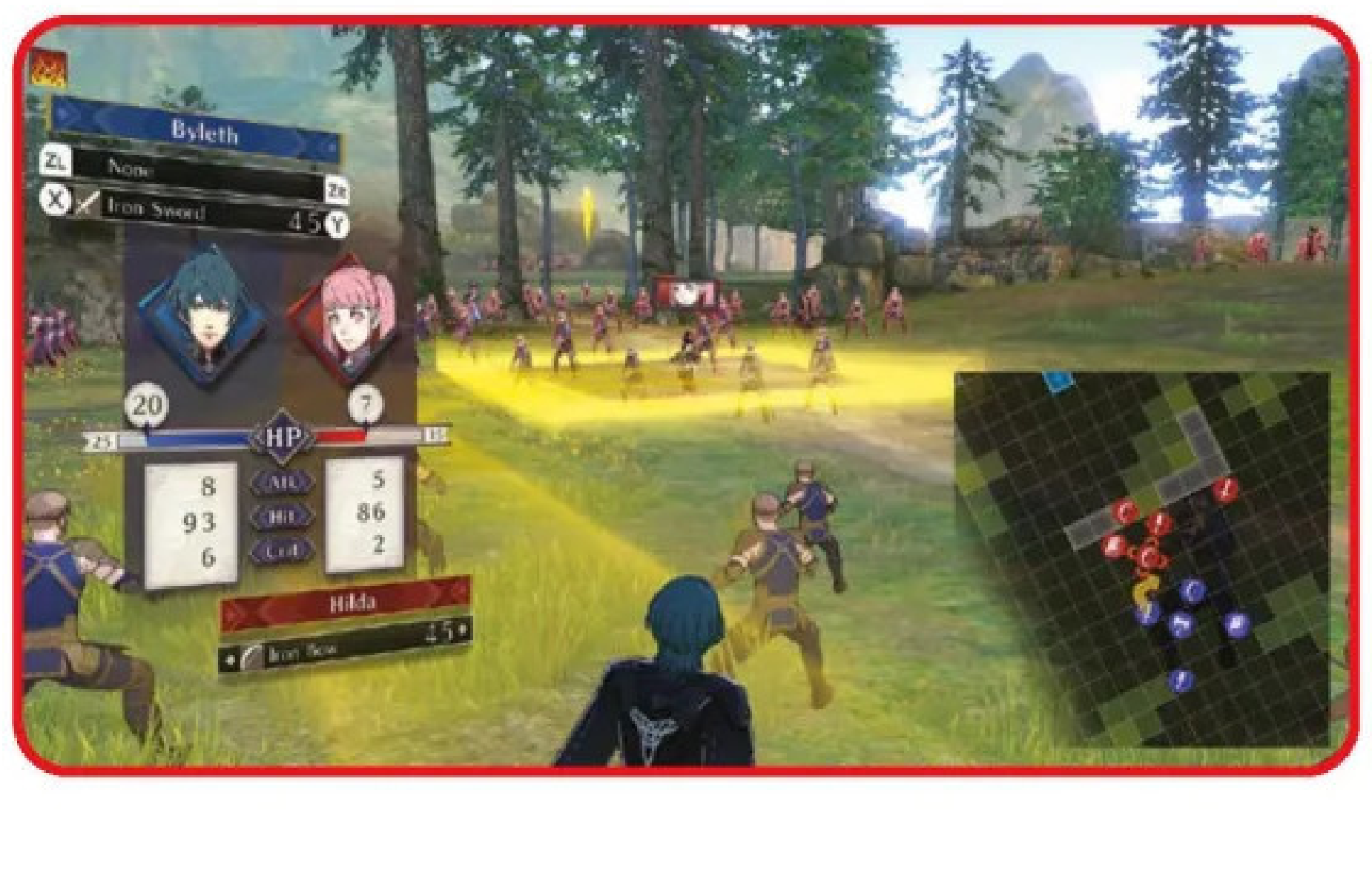


Fire Emblem: Three Houses

Blazing a trail

Nintendo's strategy series has always enjoyed popularity in Japan, but it took a while for *Fire Emblem* fever to hit Western shores. That happened with *Awakening* on the 3DS, and this Switch debut for the series is the most confident entry yet.

Imbuing social sim elements into the game's academy setting, along with aligning yourself to a faction, provides a replayability aspect that is uncommon in JRPGs. Plus, the strategy-RPG action and story itself is a franchise high point.



Pokémon Scarlet & Violet

Capturing our hearts

This creature-catching series has enjoyed two mainline entries and a healthy degree of side entries on the Nintendo Switch. We're picking this duo from the Poké-plethora solely due to its sheer ambition.

Okay, so *Scarlet & Violet* aren't perfect – and at times you'll hear your console wheezing as the performance chugs along. That said, these two titles are the most exciting that *Pokémon* has been for a while, thanks to a bold open world and a suite of new systems that make catching 'em all better than ever.

Super Smash Bros Ultimate

A smash hit

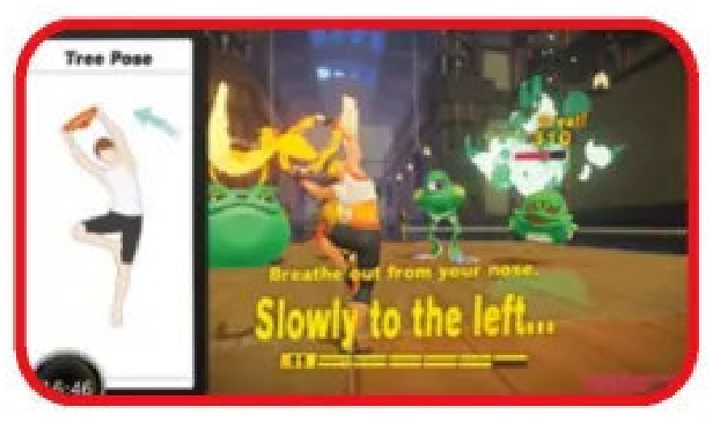
You're likely familiar with Nintendo's all-star brawling series and its celebratory fisticuffs. *Ultimate* is not only a celebration of Nintendo and beyond, but also a victory lap for the *Smash* series itself. Featuring every playable character that has appeared in the franchise before is a feat worth selling the game on alone, yet the dev team supercharged this with an epic story mode, DLC characters spotlighting franchises like *Persona*, *Banjo-Kazooie* and *Final Fantasy*, and so much more.

Ring Fit Adventure

Push for the burn

At this point, you might be crying, "What in sweet Miyamoto of mercy is this!?" Look, Nintendo has a reputation for deftly thinking outside the box, and *Ring Fit Adventure* encapsulates that to its fullest effect.

Utilising the adept motion-control capabilities of the Switch Joy-Con controllers – slotted into bundled Ring-Con and Leg Strap peripherals – this is a full-on RPG that gamifies fitness. It's a surprisingly deep adventure: one that'll have you soaked in sweat and your glutes screaming for mercy.

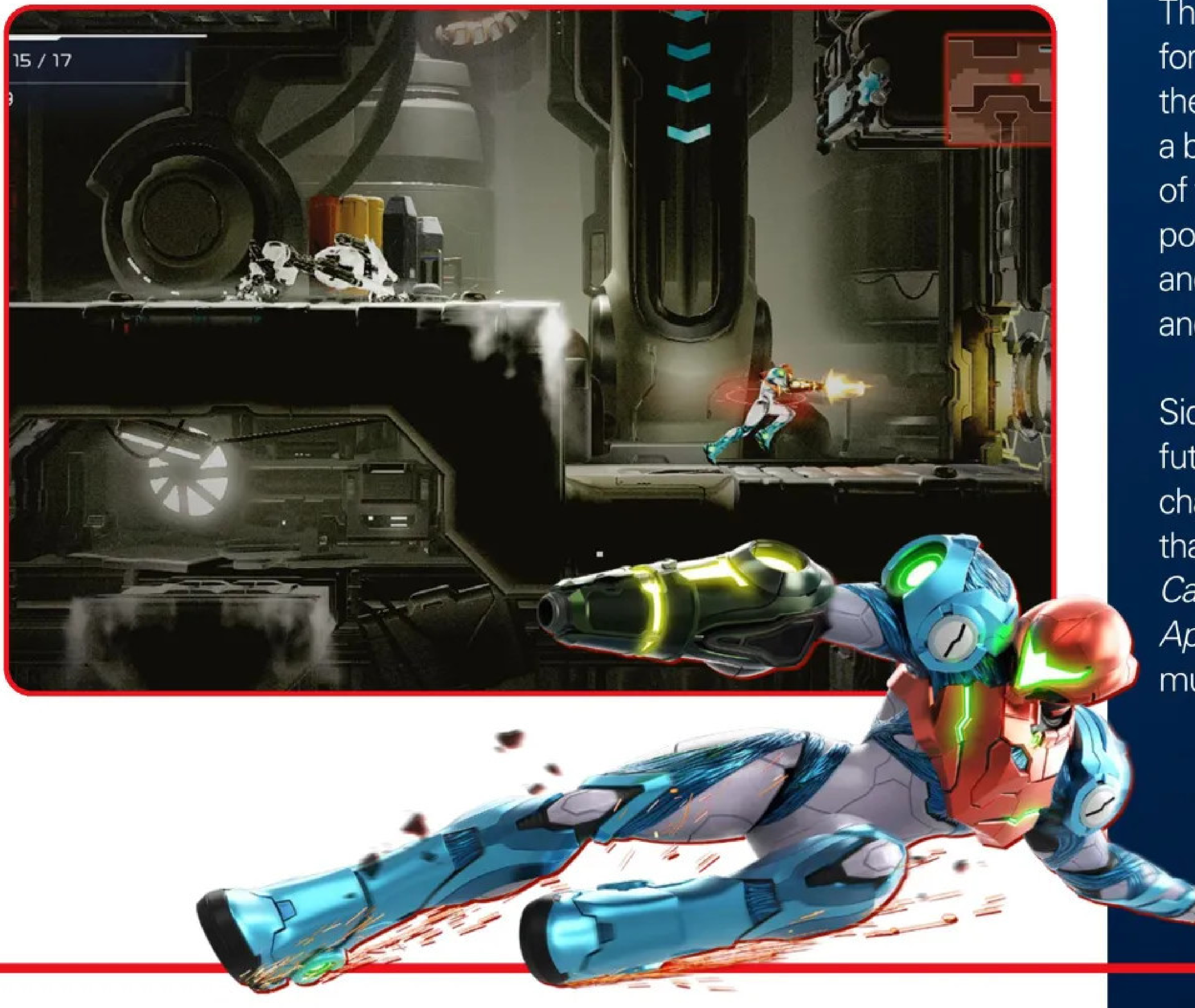


Metroid Dread

Better off Dread than dead

Bounty hunter Samus Aran is never far from a Nintendo fan's thoughts, but probably is distant in many a Nintendo executive's head. The poor hero hadn't experienced a new entry in her series since *Metroid: Other M* in 2010.

MercurySteam stepped in to right that wrong and delivered a sublime sequel that progresses the *Metroid* timeline into new uncharted territory. This is *Metroid* at its side-scrolling best, marking an electrifying return for the series that'll hopefully stick around.



The Legend Of Zelda: Breath Of The Wild

A Link to the Future

Talk about a breath of fresh air! Along with *Mario*, *Zelda* is a series that holds an air of prestige with Nintendo. While every *Zelda* game is top-notch, you wouldn't be scorned for saying they're a tad same-y. *Breath Of The Wild* changed that, however. By providing a Hylian open sandbox of experimentation and taking lessons from Western role-playing classics like *Skyrim*, this launch-day epic adventure for the Switch is still one of its best titles.

Astral Chain

One-two punch

A Nintendo console isn't usually the place you'd think to find a hardcore gritty character action game, and yet here is *Astral Chain*. Designed by the action game virtuosos at PlatinumGames, this sci-fi explosion is *Akira* meets *Evangelion* with the high-octane flips and kicks of *Bayonetta*.

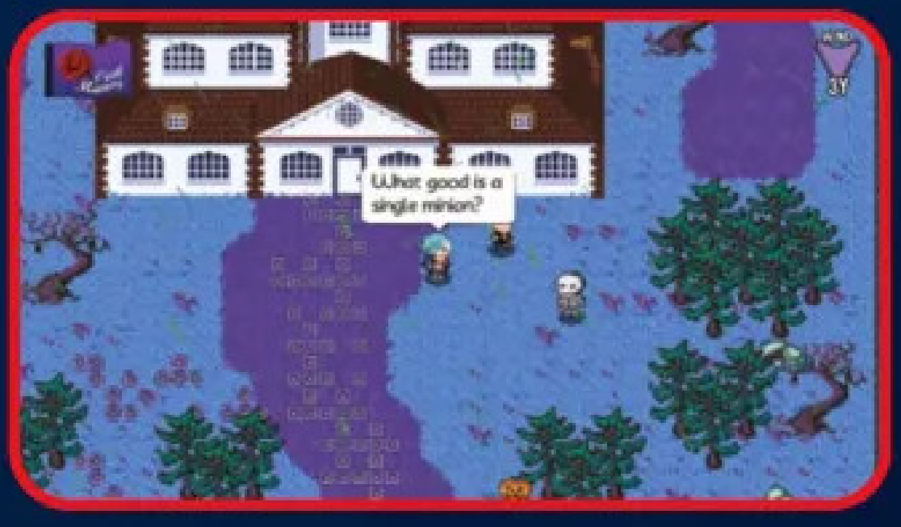
What sets *Astral Chain* apart is you get to control *two* characters at once: your police officer avatar and their tethered Legion familiar, making for a complex and satisfying combat system.

Golf Story

Fairway to heaven

The Switch doesn't get enough credit for its indie support. Like a successor to the PlayStation Vita, this hybrid hero is a bastion for creativity, and a champion of this is *Golf Story*. It channels classic point-and-click comedy with adventure and, of course, golf – it's puttin' great and genuinely unique.

Nintendo took a chance with Sidebar Games and its quirky future classic, kickstarting an indie-championing legacy that's brought us *Cadence Of Hyrule*, *Ape Out* and much more.



BEST OF THE REST

With over 40 years in gaming, there's almost too much Nintendo to cover – here are the highlights we couldn't squeeze in elsewhere

In the time before consoles with cartridges and discs became popular, most electronic gaming devices were sold as self-contained units with a hard limit on the number of games they played. Nintendo's first involvement in home videogames came with the introduction of the Color TV-Game systems in 1977, each of which played variations on simple games like *Pong*. These were popular in Japan, selling 3 million units across four iterations, but it was the Game & Watch series that really caught on. These handheld LCD games were introduced in 1980, and unlike the Color TV-Game consoles, they were sold around the world.

The first game was a simple one called *Ball*, but Nintendo soon expanded the concept with multi-screen games featuring popular licensed characters like Popeye, Snoopy and Mickey Mouse. As Nintendo's own stable of characters grew, the likes of Mario Bros and Zelda also starred in Game & Watch games, though it was *Donkey Kong* that was the most popular, with a massive 8 million systems sold.

Throughout the late Eighties and early Nineties, the success of the NES and SNES might have convinced fans that Nintendo could do no wrong. Anyone under that illusion would have been given a rude awakening by the Virtual Boy, a tabletop console that was released in Japan and North America in 1995, which used an unusual combination of red LED lights and oscillating mirrors to create an illusion of 3D imagery. It wasn't a popular system due to its red and black graphics and lack of games, and Nintendo has never reissued the system's games, so it's quite a tough system to get into, but over the years some people have come to love it for its novelty. If you're looking into it, the best games to try include *Virtual Boy Wario Land*, *Galactic Pinball* and *Teleroboxer*.

Nintendo would try 3D displays again many years later when it released the 3DS, a successor to the enormously popular DS. Much like its predecessor, the 3DS had two screens arranged vertically, with the bottom screen capable of accepting touch input, but this time the top screen was wider and offered 3D visuals without the use of glasses. The system got off to a stuttering start when it was released in early 2011, and its price was cut by a third after less than six months on the shelves, with existing owners given 20 free downloadable NES and Game Boy Advance games by way of apology. The strategy paid off for Nintendo, greatly increasing the popularity of the console and paving the way for further devices in the family, including the 2DS, 3DS XL and eventually the more powerful New Nintendo 3DS. By the time the systems were finally discontinued, they had sold over 75 million units combined.

A lot of the success of the 3DS came down to its spectacular games. The usual suspects were present and as good as you'd expect – *Super Mario 3D Land* makes effective use of the top screen's illusion of depth, and *Mario Kart 7* adds gliding and underwater sections. *The Legend Of Zelda* was well represented with *A Link Between Worlds*, as well as remakes of *Ocarina Of Time* and *Majora's Mask*. *Fire Emblem Awakening* finally popularised the strategy RPG series outside of Japan, the *Super Smash Bros* series made its handheld debut and *Kid Icarus* made its first appearance since 1991.

In 2012, Nintendo released the Wii U, a brand new console that was its first to offer high-definition graphics. The console's defining feature was its controller, which featured a large central touchscreen that could be used for off-TV play or as a second screen. Because the system had a similar name and appearance to the original Wii, the branding was confusing, and third-party developers quickly abandoned the Wii U after it struggled to sell – just 13.56 million consoles were sold worldwide.

Though the Wii U wasn't popular, it did have some truly brilliant games, many of which are now available on the Switch, including *The Legend Of Zelda: Breath Of The Wild*, *Mario Kart 8*, *Donkey Kong Country: Tropical Freeze* and *Bayonetta 2*. There are still some great games that are only available on the Wii U, though. *Yoshi's Woolly World* is a platform game with a really unique art style, and *Xenoblade Chronicles X* takes the RPG series into an open-world setting. The console also played host to some brand-new games – *Splatoon* is an awesome multiplayer shoot-'em-up featuring the squid-kid Inklings, and *Super Mario Maker* gave players the chance to design their own Mario levels. Both of them would receive sequels on the Switch, where they received the huge audiences they deserved. ✱

DONKEY KONG II
GAME & WATCH
CONTROLLER
JUMP
Nintendo

» DS fans will see some similarities in this old *Donkey Kong II* Game & Watch.

» Unlike the original DS, the 3DS includes a sliding analogue thumb disc.

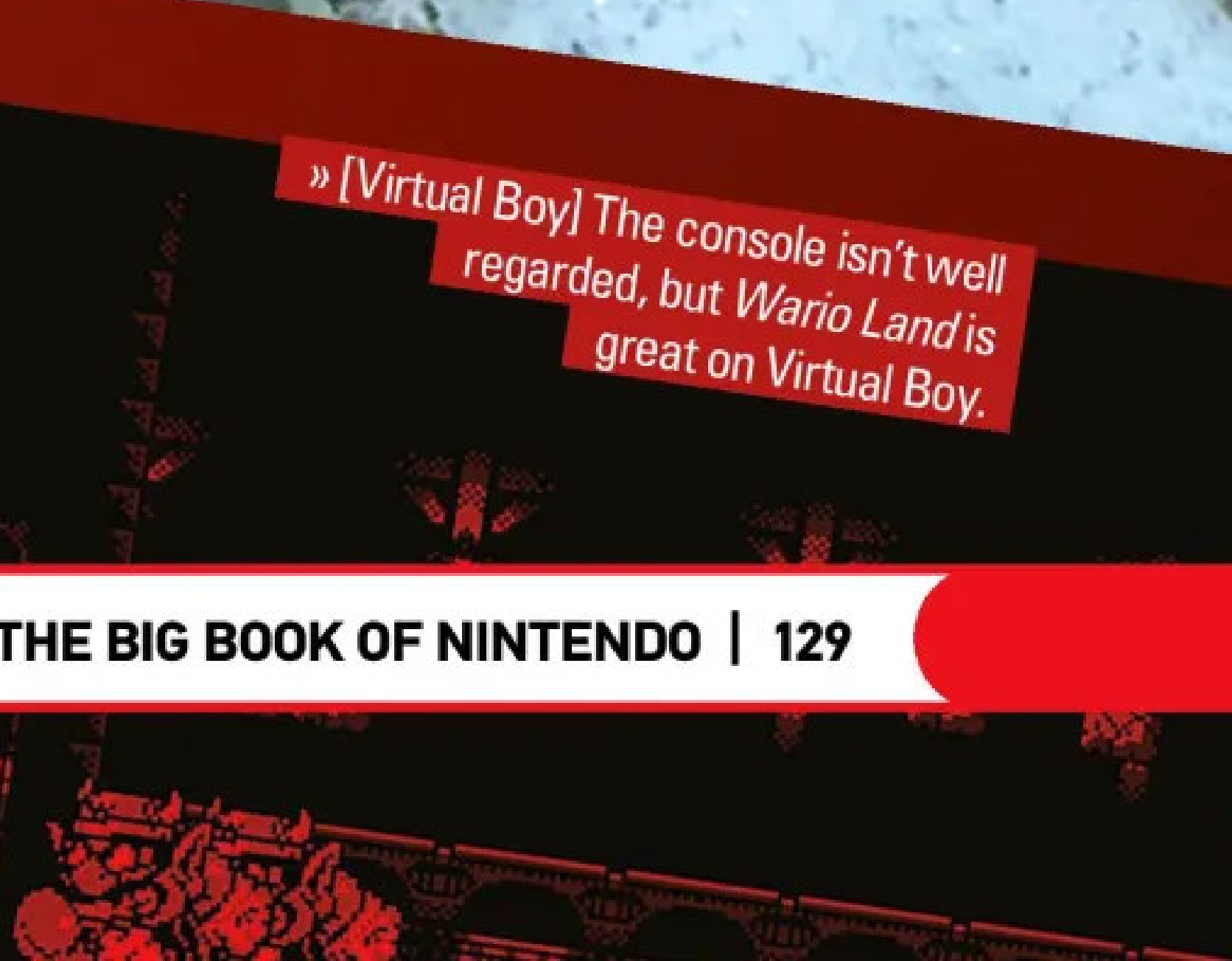
» [Wii U] *Yoshi's Woolly World* is good fun and somehow never made it to Switch.

» [3DS] *Super Mario 3D Land* is an excellent stripped-back 3D platform game.

» [Wii U] *Splatoon* was bought by more than a third of Wii U owners – a big success.

» [3DS] *A Link Between Worlds* is a direct sequel to *A Link To The Past*.

» [3DS] *Fire Emblem Awakening* was a big turning point for Intelligent Systems' series.



» [Virtual Boy] The console isn't well regarded, but *Wario Land* is great on Virtual Boy.

TV GAME
ブロック崩し
MODEL CTG-BK6
Nintendo

» This Color TV-Game definitely looks like it's from the Seventies!

x3 Hardware images © Evan Amos

100% UNOFFICIAL

THE BIG BOOK OF NINTENDO

Future PLC Quay House, The Ambury, Bath, BA1 1UA

Bookazine Editorial
Group Editor **Dan Peel**
Art Editor **Jonathan Wells**
Senior Art Editor **Andy Downes**
Head of Art & Design **Greg Whitaker**
Editorial Director **Jon White**

Retro Gamer Editorial
Editor **Darran Jones**
Art Editor **Andy Salter**
Editorial Director **Tony Mott**
Group Art Director **Woz Brown**

Cover images
Getty, Nintendo

Photography
All copyrights and trademarks are recognised and respected

Advertising
Media packs are available on request
Commercial Director **Clare Dove**

International
Head of Print Licensing **Rachel Shaw**
licensing@futurenet.com
www.futurecontenthub.com

Circulation
Head of Newstrade **Tim Mathers**

Production
Head of Production **Mark Constance**
Production Project Manager **Matthew Eglinton**
Advertising Production Manager **Joanne Crosby**
Digital Editions Controller **Jason Hudson**
Production Managers **Keely Miller, Nola Cokely,**
Vivienne Calvert, Fran Twentyman

Printed in the UK

Distributed by Marketforce, 5 Churchill Place, Canary Wharf, London, E14 5HU
www.marketforce.co.uk – For enquiries, please email:
mfcommunications@futurenet.com

The Big Book of Nintendo First Edition (GAB5368)

© 2023 Future Publishing Limited

We are committed to only using magazine paper which is derived from responsibly managed, certified forestry and chlorine-free manufacture. The paper in this bookazine was sourced and produced from sustainable managed forests, conforming to strict environmental and socioeconomic standards.

All contents © 2023 Future Publishing Limited or published under licence. All rights reserved. No part of this magazine may be used, stored, transmitted or reproduced in any way without the prior written permission of the publisher. Future Publishing Limited (company number 2008885) is registered in England and Wales. Registered office: Quay House, The Ambury, Bath BA1 1UA. All information contained in this publication is for information only and is, as far as we are aware, correct at the time of going to press. Future cannot accept any responsibility for errors or inaccuracies in such information. You are advised to contact manufacturers and retailers directly with regard to the price of products/services referred to in this publication. Apps and websites mentioned in this publication are not under our control. We are not responsible for their contents or any other changes or updates to them. This magazine is fully independent and not affiliated in any way with the companies mentioned herein.

FUTURE

Connectors.
Creators.
Experience
Makers.

Future plc is a public company quoted on the London Stock Exchange (symbol: FUTR)
www.futureplc.com

Chief Executive Officer **Jon Steinberg**
Non-Executive Chairman **Richard Huntingford**
Chief Financial and Strategy Officer **Penny Ladkin-Brand**

Tel +44 (0)1225 442 244

Part of the
retro GAMER
bookazine series

Widely Recycled

ipso. For press freedom with responsibility

100% UNOFFICIAL

THE BIG BOOK OF NINTENDO

THE ULTIMATE GUIDE TO THE VERY BEST OF NINTENDO

THE NINTENDO TIMELINE

Here are the key moments on Nintendo's journey to becoming one of the most popular entertainment companies in the world

NINTENDO HISTORY

Discover the key moments on Nintendo's journey from playing card manufacturer to one of the world's most popular entertainment companies

ULTIMATE GUIDE THE LEGEND OF ZELDA A LINK TO THE PAST

WORDS BY NICK THORPE

WHAT'S THE STORY?

CLASSIC GAMES

Take an in-depth look at some of Nintendo's most groundbreaking games, from *The Legend Of Zelda: A Link To The Past* to *Super Mario 64*

INSIDE THE NINTENDO 64

INTERVIEWEES

ICONIC CONSOLES

Explore the stories of the consoles and hardware that have shaped Nintendo's story, from the earliest machines right up to the present day

TOP 25 GAMECUBE GAMES

WORDS BY NICK THORPE

TOP 25s

Run down the greatest 25 games from the NES, Game Boy Advance and GameCube as chosen by our readers – do your favourites make the cut?

BOOKAZINE